

Statistika bakalářská práce Vliv pandemií a mimořádných událostí na vývoj leteckého provozu

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5 8 2021

```
## 'data.frame': 256 obs. of 163 variables:
## $ time : chr "2000M01" "2000M02" "2000M03" "2000M04" ...
## $ year : int 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 ...
## $ month : int 1 2 3 4 5 6 7 8 9 10 ...
## $ X2001_FC : int 1 1 1 1 1 1 1 1 1 1 ...
## $ X2001_TER : int 0 0 0 0 0 0 0 0 0 0 ...
## $ X2003_SARS: int 0 0 0 0 0 0 0 0 0 0 ...
## $ X2005_FLU : int 0 0 0 0 0 0 0 0 0 0 ...
## $ X2008_FC : int 0 0 0 0 0 0 0 0 0 0 ...
## $ X2009_SF : int 0 0 0 0 0 0 0 0 0 0 ...
## $ X2010_ER : int 0 0 0 0 0 0 0 0 0 0 ...
## $ X2012_MERS: int 0 0 0 0 0 0 0 0 0 0 ...
## $ X2013_FLU : int 0 0 0 0 0 0 0 0 0 0 ...
## $ X2014_EB : int 0 0 0 0 0 0 0 0 0 0 ...
## $ X2019_CV : int 0 0 0 0 0 0 0 0 0 0 ...
## $ MAD_BCN : int 131702 159628 186789 150840 178298 183045 155336 97579
167009 189835 ...
## $ BCN_MAD : int 127125 157147 181507 147094 178357 178680 160458 97264
164370 190356 ...
## $ LPA_MAD : int 42835 36783 45674 50767 47952 45558 57774 62574 54076
49814 ...
## $ TFS_MAN : int 56983 68499 75963 71204 60551 67144 71476 84156 90057
82922 ...
## $ AGP_MAD : int 31635 35960 46990 51509 51963 53565 54515 55125 50456
52440 ...
## $ PMI_BCN : int 46883 49784 58469 67343 61656 61718 64258 74743 66970
62745 ...
## $ ALC_LGW : int 25193 30256 36794 53943 56523 64424 72670 83182 80618
62322 ...
## $ AMS_LHR : int 156051 174981 199714 197898 206936 192629 212427 20569
4 204842 204575 ...
## $ MAD_MIA : int 25483 25329 30610 32270 30428 31212 35756 30794 30330
33329 ...
## $ AMS_DTW : int 54989 49883 66789 73336 80806 102761 104486 96114 9693
3 88295 ...
## $ BCN_JFK : int 9473 8175 13370 21658 25069 26854 23191 20377 21804 23
177 ...
## $ AMS_NRT : int 22624 25684 31291 33525 35182 35700 37525 37166 37059
37851 ...
## $ AMS_HKG : int 17006 14911 18950 19309 17666 17533 23265 22453 23181
```

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23403 ...
## $ MAD_JFK : int 22438 17898 27860 31276 29636 36173 38350 38855 35413
33858 ...
## $ AMS_TLV : int 23308 23139 29158 40099 38837 33416 48715 55703 40413
36959 ...
## $ AMS_JFK : int 34754 33386 43123 48171 52685 49732 48187 48513 46884
46367 ...
## $ DUB_LHR : int 151711 161608 186642 186371 194798 201745 211801 21311
4 198207 189856 ...
## $ DUB_JFK : int 16509 18185 24201 23277 24537 26332 28217 27270 27060
25639 ...
## $ SNN_JFK : int 9634 11609 18293 15331 16894 22257 26641 25119 21384 1
8909 ...
## $ AMS_KEF : int 4256 4227 6282 6590 7876 7395 8555 8202 7105 6601 ...
## $ FCO_MXP : int NA NA NA NA NA NA NA NA NA NA ...
## $ MXP_LHR : int NA NA NA NA NA NA NA NA NA NA ...
## $ FCO_JFK : int NA NA NA NA NA NA NA NA NA NA ...
## $ MXP_JFK : int NA NA NA NA NA NA NA NA NA NA ...
## $ VIE_IAD : int NA NA NA NA NA NA NA NA NA NA ...
## $ MXP_NRT : int NA NA NA NA NA NA NA NA NA NA ...
## $ FCO_NRT : int NA NA NA NA NA NA NA NA NA NA ...
## $ MXP_CDG : int NA NA NA NA NA NA NA NA NA NA ...
## $ FRA_TXL : int NA NA NA NA NA NA NA NA NA NA ...
## $ MUC_HAM : int NA NA NA NA NA NA NA NA NA NA ...
## $ DUS_MUC : int NA NA NA NA NA NA NA NA NA NA ...
## $ TXL_FRA : int NA NA NA NA NA NA NA NA NA NA ...
## $ STR_TXL : int NA NA NA NA NA NA NA NA NA NA ...
## $ CGN_TXL : int NA NA NA NA NA NA NA NA NA NA ...
## $ ORY_NCE : int NA NA NA NA NA NA NA NA NA NA ...
## $ NCE_ORY : int NA NA NA NA NA NA NA NA NA NA ...
## $ LYS_CDG : int NA NA NA NA NA NA NA NA NA NA ...
## $ BRU_LHR : int NA NA NA NA NA NA NA NA NA NA ...
## $ VIE_FRA : int NA NA NA NA NA NA NA NA NA NA ...
## $ OSL_TRD : int NA NA NA NA NA NA NA NA NA NA ...
## $ HEL_ARN : int NA NA NA NA NA NA NA NA NA NA ...
## $ FRA_ORD : int NA NA NA NA NA NA NA NA NA NA ...
## $ MUC_ORD : int NA NA NA NA NA NA NA NA NA NA ...
## $ STR_ATL : int NA NA NA NA NA NA NA NA NA NA ...
## $ CDG_JFK : int NA NA NA NA NA NA NA NA NA NA ...
## $ BRU_JKF : int NA NA NA NA NA NA NA NA NA NA ...
## $ FRA_SIN : int NA NA NA NA NA NA NA NA NA NA ...
## $ HEL_JFK : int NA NA NA NA NA NA NA NA NA NA ...
## $ CDG_SIN : int NA NA NA NA NA NA NA NA NA NA ...
## $ VIE_BKK : int NA NA NA NA NA NA NA NA NA NA ...
## $ HEL_PEK : int NA NA NA NA NA NA NA NA NA NA ...
## $ ORY_TLS : int NA NA NA NA NA NA NA NA NA NA ...
## $ HAM_MUC : int NA NA NA NA NA NA NA NA NA NA ...
## $ FRA_NRT : int NA NA NA NA NA NA NA NA NA NA ...
## $ CDG_SGN : int NA NA NA NA NA NA NA NA NA NA ...
## $ CDG_HND : int NA NA NA NA NA NA NA NA NA NA ...

```

```

## $ CGN_MUC      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ BRU_JFK      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ CDG_PEK      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ BRU_MAD      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ VIE_JFK      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ FRA_HKG      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ HEL_PEK.1    : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ BGY_STN      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ STR_ATL.1    : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ FRA_JFK      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ BGO_OSL_     : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ TRD_OSL      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ TOS_OSL      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ SVG_OSL      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ NCE_JFK      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ CDG_DXB      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ LHR_KEF      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ LGW_MCO      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ MAN_SIN      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ LHR_JFK      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ GLA_LHR      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ LTN_EDI      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ STN_DUB      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ EDI_LHR      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ MAN_LHR      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ BHX_DUB      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ LGW_AGP      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ LGW_MCO.1    : int  NA NA NA NA NA NA NA NA NA NA NA ...
## $ BHX_EWR      : int  NA NA NA NA NA NA NA NA NA NA NA ...
## [list output truncated]

```

```

##      time year month X2001_FC X2001_TER X2003_SARS X2005_FLU X2008_FC X200
9_SF
## 1 2000M01 2000      1          1          0          0          0          0
0
## 2 2000M02 2000      2          1          0          0          0          0
0
## 3 2000M03 2000      3          1          0          0          0          0
0
## 4 2000M04 2000      4          1          0          0          0          0
0
## 5 2000M05 2000      5          1          0          0          0          0
0
## 6 2000M06 2000      6          1          0          0          0          0
0
##      X2010_ER X2012_MERS X2013_FLU X2014_EB X2019_CV MAD_BCN BCN_MAD LPA_MAD
## 1          0          0          0          0          0 131702 127125 42835
## 2          0          0          0          0          0 159628 157147 36783
## 3          0          0          0          0          0 186789 181507 45674
## 4          0          0          0          0          0 150840 147094 50767

```



```

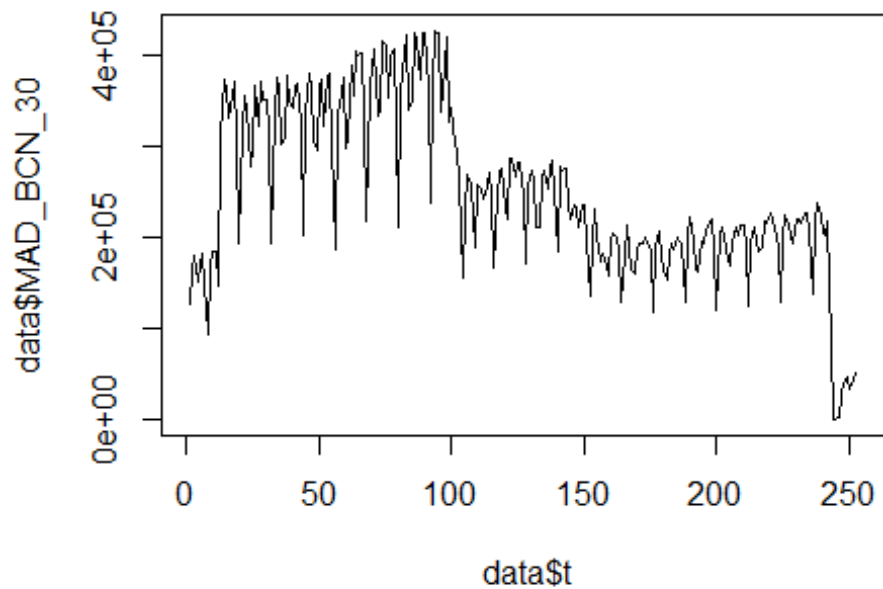
##   WAW_CDG CPH_OSL LIS_MAD ARN_CPH LIS_EWR ARN_EWR CPH_EWR HEL_PVG CPH_KEF
## 1      NA      NA      NA      NA      NA      NA      NA      NA      NA
## 2      NA      NA      NA      NA      NA      NA      NA      NA      NA
## 3      NA      NA      NA      NA      NA      NA      NA      NA      NA
## 4      NA      NA      NA      NA      NA      NA      NA      NA      NA
## 5      NA      NA      NA      NA      NA      NA      NA      NA      NA
## 6      NA      NA      NA      NA      NA      NA      NA      NA      NA
##   FRA_KEF WAW_ORD MXP_PVG MUC_PEK EDI_EWR OSL_KEF ARN_BKK HEL_BKK AMS_BKK
## 1      NA      NA      NA      NA      NA      NA      NA      NA      NA
## 2      NA      NA      NA      NA      NA      NA      NA      NA      NA
## 3      NA      NA      NA      NA      NA      NA      NA      NA      NA
## 4      NA      NA      NA      NA      NA      NA      NA      NA      NA
## 5      NA      NA      NA      NA      NA      NA      NA      NA      NA
## 6      NA      NA      NA      NA      NA      NA      NA      NA      NA
##   FRA_PVG LHR_DUB CDG_FCO MUC_TXL FIU_JFK FIU_HKG CDG_HKG FRA_PEK   HKG
## 1      NA      NA      NA      NA      NA      NA      NA      NA 2292691
## 2      NA      NA      NA      NA      NA      NA      NA      NA 2538864
## 3      NA      NA      NA      NA      NA      NA      NA      NA 2512551
## 4      NA      NA      NA      NA      NA      NA      NA      NA 2878766
## 5      NA      NA      NA      NA      NA      NA      NA      NA 2652838
## 6      NA      NA      NA      NA      NA      NA      NA      NA 2631198
##      SIN  MAC  JFK  ORD  FRA  LHR  CDG      AMS      MAD  MUC  LGW  FCO      BCN  ORY
DTW
## 1 2221797 1814  NA  NA  NA  NA  NA 2490645 1537450  NA  NA  NA  799778  NA
NA
## 2 2215569 1968  NA  NA  NA  NA  NA 2561520 1598244  NA  NA  NA  894623  NA
NA
## 3 2345783 1875  NA  NA  NA  NA  NA 3067554 2003761  NA  NA  NA 1158845  NA
NA
## 4 2371910 1971  NA  NA  NA  NA  NA 3226951 2142331  NA  NA  NA 1265775  NA
NA
## 5 2271392 1994  NA  NA  NA  NA  NA 3546493 2092317  NA  NA  NA 1284542  NA
NA
## 6 2419411 1939  NA  NA  NA  NA  NA 3492787 2115167  NA  NA  NA 1288200  NA
NA
##   MIA  ATL  MCO  t  days
## 1  NA  NA  NA  1  31
## 2  NA  NA  NA  2  29
## 3  NA  NA  NA  3  31
## 4  NA  NA  NA  4  30
## 5  NA  NA  NA  5  31
## 6  NA  NA  NA  6  30

```

5. Spojení Adolfo Suárez Madrid Barajas Airport -> Barcelona El Prat Airport

```
data$MAD_BCN_30 <- data$MAD_BCN/data$days * 30
```

```
plot(data$MAD_BCN_30~data$t, t="l")
```



```
lm_MAD_BCN1 <- glm(data$MAD_BCN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MAD_BCN1)

##
## Call:
## glm(formula = data$MAD_BCN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -164660  -39327    248    34742  134870
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   394778.33   11143.33  35.427 < 2e-16 ***
## data$t        -993.04     72.41  -13.714 < 2e-16 ***
## data$X2001_FC -139261.88  15613.10  -8.920 < 2e-16 ***
## data$X2001_TER  -3775.60   17002.15  -0.222 0.824448
## data$X2008_FC  -7026.07   15084.07  -0.466 0.641778
## data$X2009_SF -34852.39   17744.90  -1.964 0.050656 .
## data$X2010_ER  37154.19   32238.12   1.152 0.250247
## data$X2019_CV -66902.77   18491.50  -3.618 0.000361 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3677011221)
```

```

##
## Null deviance: 2.1067e+12 on 251 degrees of freedom
## Residual deviance: 8.9719e+11 on 244 degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 6275.4
##
## Number of Fisher Scoring iterations: 2

lm_MAD_BCN2 <- glm(data$MAD_BCN_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_MAD_BCN2)

##
## Call:
## glm(formula = data$MAD_BCN_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -163799 -38366 -3795 34780 134983
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 389583.39 9753.69 39.942 < 2e-16 ***
## data$t -975.58 67.12 -14.534 < 2e-16 ***
## data$X2001_FC -134914.46 15316.69 -8.808 2.25e-16 ***
## data$X2019_CV -65994.26 18413.26 -3.584 0.000407 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3685789925)
##
## Null deviance: 2.1067e+12 on 251 degrees of freedom
## Residual deviance: 9.1408e+11 on 248 degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 6272.1
##
## Number of Fisher Scoring iterations: 2

lm_MAD_BCN3 <- lm(data$MAD_BCN_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_MAD_BCN3)

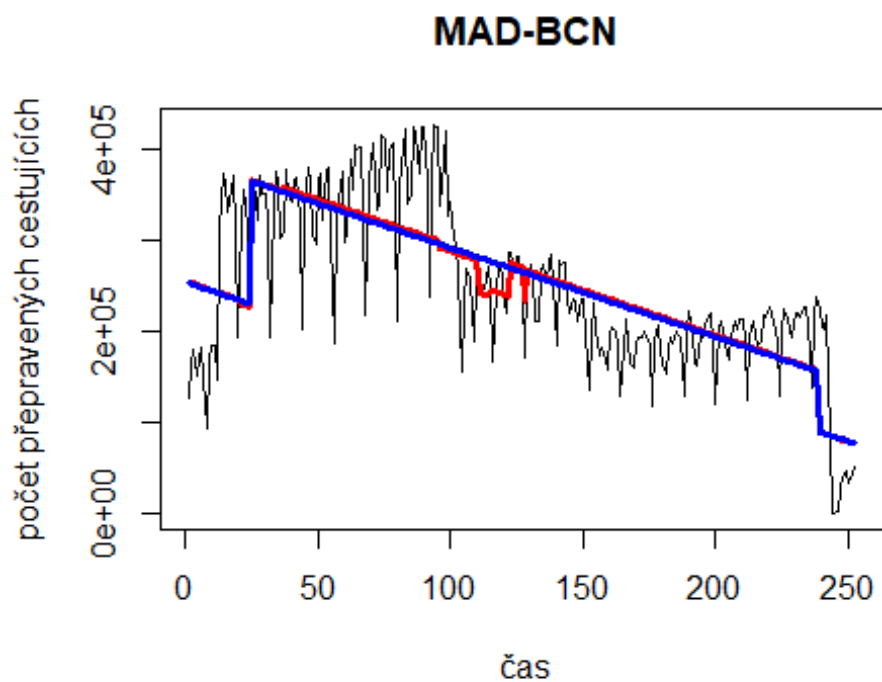
##
## Call:
## lm(formula = data$MAD_BCN_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -163799 -38366 -3795 34780 134983
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 389583.39 9753.69 39.942 < 2e-16 ***

```



```
## data$t          -975.58      67.12 -14.534 < 2e-16 ***
## data$X2001_FC  -134914.46   15316.69  -8.808 2.25e-16 ***
## data$X2019_CV  -65994.26   18413.26  -3.584 0.000407 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 60710 on 248 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared:  0.5661, Adjusted R-squared:  0.5609
## F-statistic: 107.9 on 3 and 248 DF,  p-value: < 2.2e-16

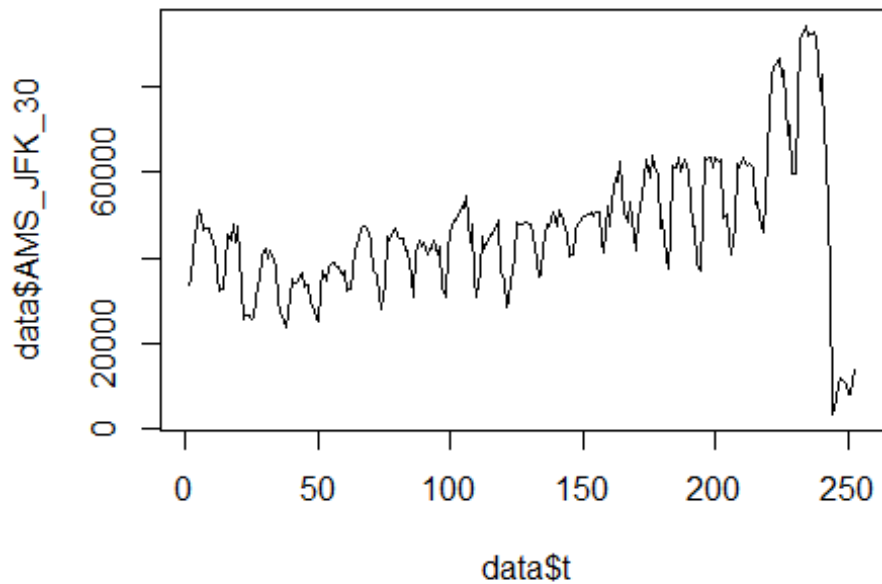
plot(data$MAD_BCN_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="MAD-BCN")
fit <- c(rep(0, 0), lm_MAD_BCN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_MAD_BCN2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Amsterdam -> letiště John F. Kennedy

```
data$AMS_JFK_30 <- data$AMS_JFK/data$days * 30
plot(data$AMS_JFK_30~data$t, t="l")
```



```
lm_AMS_JFK1 <- glm(data$AMS_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_AMS_JFK1)
```

```
##
## Call:
## glm(formula = data$AMS_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -25723  -5870    118    4878   54493
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   25548.87   2205.84  11.582 < 2e-16 ***
## data$t         176.80     14.13  12.516 < 2e-16 ***
## data$X2001_FC  12518.38   3001.66   4.170 4.23e-05 ***
## data$X2001_TER  -105.60   3183.90  -0.033  0.974
## data$X2003_SARS -2714.29   4319.20  -0.628  0.530
## data$X2008_FC   493.45   2835.47   0.174  0.862
## data$X2009_SF  -5337.17   3325.43  -1.605  0.110
## data$X2010_ER   1421.72   6033.88   0.236  0.814
## data$X2019_CV -39427.52   3470.60 -11.360 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 128800550)
##
## Null deviance: 6.4049e+10 on 251 degrees of freedom
## Residual deviance: 3.1299e+10 on 243 degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5431.8
##
## Number of Fisher Scoring iterations: 2

lm_AMS_JFK2 <- glm(data$AMS_JFK_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_AMS_JFK2)

##
## Call:
## glm(formula = data$AMS_JFK_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -25718 -6169 370 4593 54514
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 24587.13 1817.22 13.530 < 2e-16 ***
## data$t 180.47 12.51 14.431 < 2e-16 ***
## data$X2001_FC 13416.66 2853.66 4.702 4.29e-06 ***
## data$X2019_CV -39366.49 3430.59 -11.475 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 127940083)
##
## Null deviance: 6.4049e+10 on 251 degrees of freedom
## Residual deviance: 3.1729e+10 on 248 degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5425.2
##
## Number of Fisher Scoring iterations: 2

lm_AMS_JFK3 <- lm(data$AMS_JFK_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_AMS_JFK3)

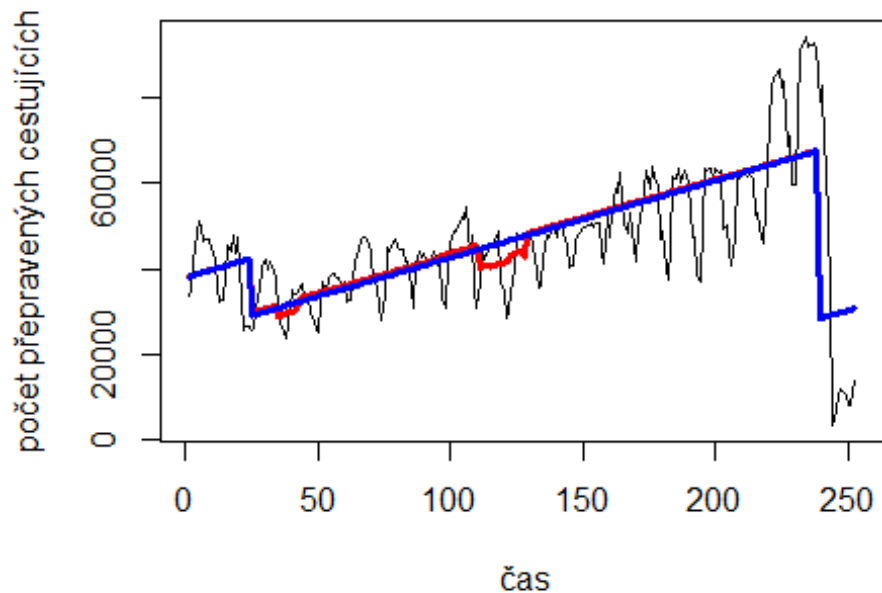
##
## Call:
## lm(formula = data$AMS_JFK_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -25718 -6169 370 4593 54514
##
## Coefficients:

```

```
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  24587.13   1817.22  13.530 < 2e-16 ***
## data$t       180.47     12.51  14.431 < 2e-16 ***
## data$X2001_FC 13416.66   2853.66   4.702 4.29e-06 ***
## data$X2019_CV -39366.49   3430.59 -11.475 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11310 on 248 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared:  0.5046, Adjusted R-squared:  0.4986
## F-statistic:  84.2 on 3 and 248 DF,  p-value: < 2.2e-16

plot(data$AMS_JFK_30, type="l",xlab="čas",ylab="počet přepravených cestujících h",main="AMS-JFK")
fit <- c(rep(0, 0), lm_AMS_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_AMS_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

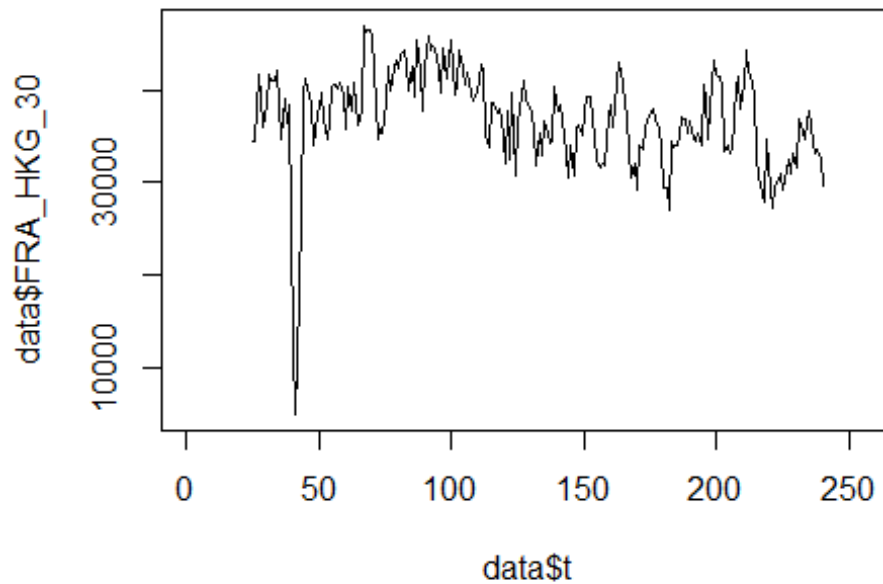
AMS-JFK



Spojení letiště Frankfurt -> letiště Hong Kong

```
data$FRA_HKG_30 <- data$FRA_HKG/data$days * 30
```

```
plot(data$FRA_HKG_30~data$t, t="l")
```



```
lm_FRA_HKG1 <- glm(data$FRA_HKG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_FRA_HKG1)
```

```
##
## Call:
## glm(formula = data$FRA_HKG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -21542.3  -2346.0   -14.6    2660.5   12412.8
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  40727.829   1025.464   39.716 < 2e-16 ***
## data$t       -28.333     6.403   -4.425 1.56e-05 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER    885.440   1550.563    0.571  0.56860
## data$X2003_SARS -13012.949   1775.707   -7.328 5.27e-12 ***
## data$X2005_FLU   2325.412   1482.527    1.569  0.11830
## data$X2008_FC    3291.931   1170.089    2.813  0.00538 **
## data$X2009_SF   -1080.462   1359.159   -0.795  0.42756
## data$X2010_ER    1052.597   2451.527    0.429  0.66811
## data$X2012_MERS  133.962   1697.034    0.079  0.93716
```

```

## data$X2013_FLU      1612.722   1513.570   1.066   0.28790
## data$X2019_CV      -2880.173   3335.632  -0.863   0.38890
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 21253092)
##
## Null deviance: 6348987268  on 215  degrees of freedom
## Residual deviance: 4356883889  on 205  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4270
##
## Number of Fisher Scoring iterations: 2

lm_FRA_HKG2 <- glm(data$FRA_HKG_30~data$t+data$X2003_SARS+data$X2008_FC)
summary(lm_FRA_HKG2)

##
## Call:
## glm(formula = data$FRA_HKG_30 ~ data$t + data$X2003_SARS + data$X2008_FC)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -21753.6  -2344.4   -97.6    2609.5   12185.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   41486.676    811.895  51.099 < 2e-16 ***
## data$t         -32.326     5.315  -6.082 5.45e-09 ***
## data$X2003_SARS -13396.699   1741.453  -7.693 5.35e-13 ***
## data$X2008_FC   2724.899    1119.769   2.433 0.0158 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 21075745)
##
## Null deviance: 6348987268  on 215  degrees of freedom
## Residual deviance: 4468057877  on 212  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4261.5
##
## Number of Fisher Scoring iterations: 2

lm_FRA_HKG3 <- lm(data$FRA_HKG_30~data$t+data$X2003_SARS+data$X2008_FC)
summary(lm_FRA_HKG3)

##
## Call:
## lm(formula = data$FRA_HKG_30 ~ data$t + data$X2003_SARS + data$X2008_FC)
##
## Residuals:

```

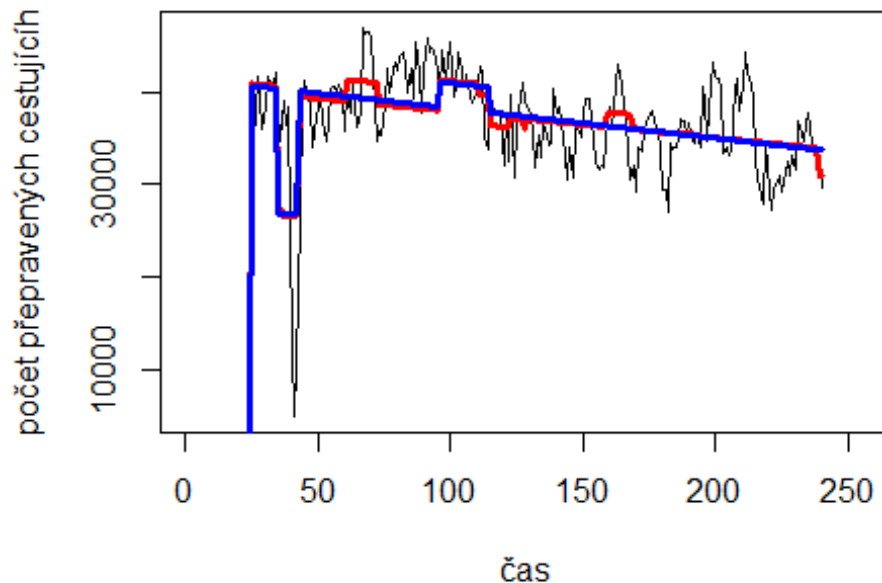
```

##      Min      1Q   Median      3Q      Max
## -21753.6 -2344.4   -97.6   2609.5 12185.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   41486.676    811.895   51.099 < 2e-16 ***
## data$t        -32.326      5.315   -6.082 5.45e-09 ***
## data$X2003_SARS -13396.699   1741.453   -7.693 5.35e-13 ***
## data$X2008_FC   2724.899    1119.769    2.433 0.0158 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4591 on 212 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.2963, Adjusted R-squared:  0.2863
## F-statistic: 29.75 on 3 and 212 DF,  p-value: 4.297e-16

plot(data$FRA_HKG_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="FRA-HKG")
fit <- c(rep(0, 24), lm_FRA_HKG1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_FRA_HKG2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

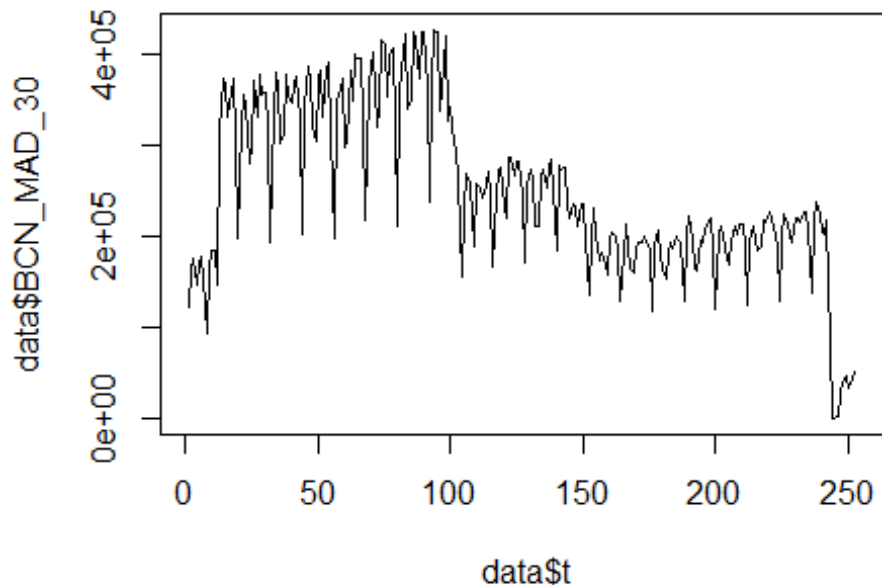
FRA-HKG



9. Spojení Barcelona El Prat Airport -> Adolfo Suárez Madrid Barajas Airport

```
data$BCN_MAD_30 <- data$BCN_MAD/data$days * 30
```

```
plot(data$BCN_MAD_30~data$t, t="l")
```



```
lm_BCN_MAD1 <- glm(data$BCN_MAD_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_BCN_MAD1)
```

```
##
## Call:
## glm(formula = data$BCN_MAD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -168105  -38220   -488     36354   136009
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   397271.30   11138.83   35.665 < 2e-16 ***
## data$t        -1006.84     72.38  -13.910 < 2e-16 ***
## data$X2001_FC -141646.11  15606.80   -9.076 < 2e-16 ***
## data$X2001_TER  -2260.44  16995.28   -0.133 0.894300
## data$X2008_FC  -7945.77  15077.97   -0.527 0.598687
```



```

## data$X2009_SF    -35442.41   17737.73   -1.998 0.046812 *
## data$X2010_ER     36976.30   32225.10    1.147 0.252324
## data$X2019_CV   -66007.71   18484.03   -3.571 0.000428 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3674041667)
##
##      Null deviance: 2.1345e+12  on 251  degrees of freedom
## Residual deviance: 8.9647e+11  on 244  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 6275.2
##
## Number of Fisher Scoring iterations: 2

lm_BCN_MAD2 <- glm(data$BCN_MAD_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_BCN_MAD2)

##
## Call:
## glm(formula = data$BCN_MAD_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -165822   -37490    -3605    38065   136297
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   392215.49    9754.71  40.208 < 2e-16 ***
## data$t         -990.82      67.13  -14.760 < 2e-16 ***
## data$X2001_FC -137167.26   15318.30  -8.954 < 2e-16 ***
## data$X2019_CV -64884.36    18415.19  -3.523 0.000507 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3686562167)
##
##      Null deviance: 2.1345e+12  on 251  degrees of freedom
## Residual deviance: 9.1427e+11  on 248  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 6272.2
##
## Number of Fisher Scoring iterations: 2

lm_BCN_MAD3 <- lm(data$BCN_MAD_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_BCN_MAD3)

##
## Call:
## lm(formula = data$BCN_MAD_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##

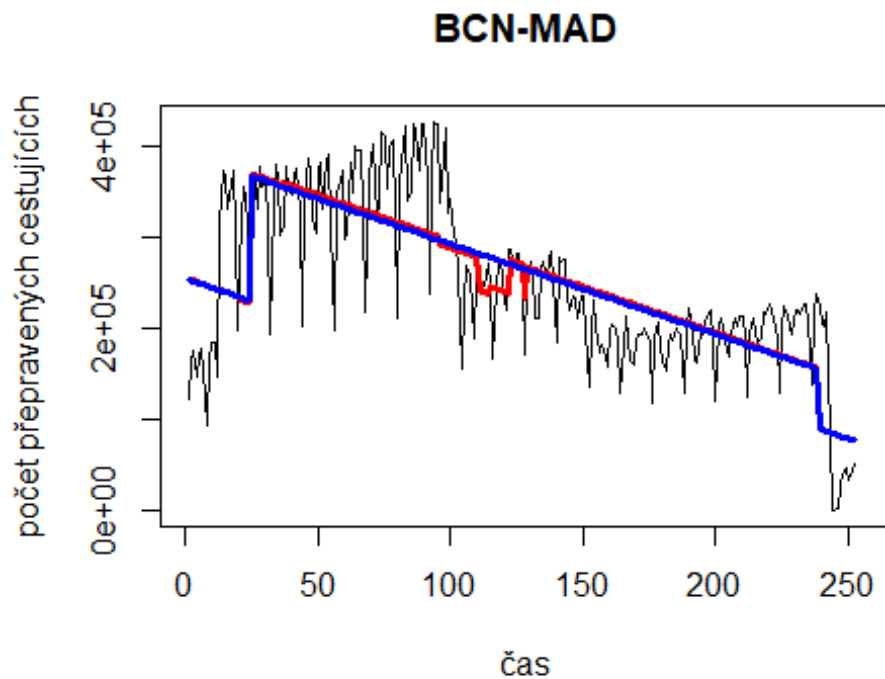
```

```

## Residuals:
##      Min       1Q   Median       3Q      Max
## -165822  -37490   -3605   38065  136297
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  392215.49   9754.71  40.208 < 2e-16 ***
## data$t       -990.82     67.13 -14.760 < 2e-16 ***
## data$X2001_FC -137167.26  15318.30  -8.954 < 2e-16 ***
## data$X2019_CV -64884.36  18415.19  -3.523 0.000507 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 60720 on 248 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared:  0.5717, Adjusted R-squared:  0.5665
## F-statistic: 110.3 on 3 and 248 DF,  p-value: < 2.2e-16

plot(data$BCN_MAD_30, type="l",xlab="čas",ylab="počet přepravených cestujících h",main="BCN-MAD")
fit <- c(rep(0,0), lm_BCN_MAD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_BCN_MAD2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

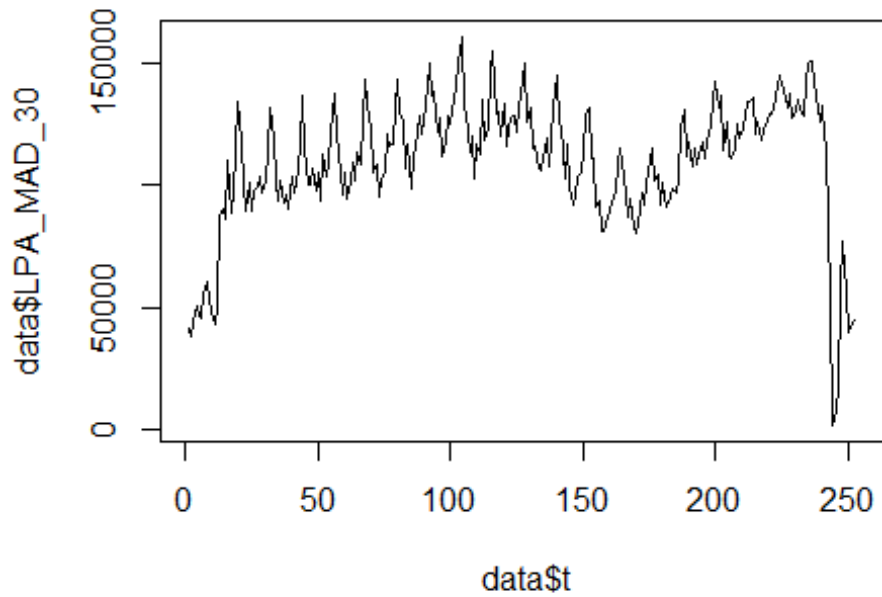


Gran Canaria -> letiště Madrid

Spojeni letiště

```
data$LPA_MAD_30 <- data$LPA_MAD/data$days * 30
```

```
plot(data$LPA_MAD_30~data$t, t="l")
```



```
lm_LPA_MAD1 <- glm(data$LPA_MAD_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
```

```
summary(lm_LPA_MAD1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$LPA_MAD_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -61675 -11940  -1355   12480   70199
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)  102698.46   3668.66  27.993 < 2e-16 ***  
## data$t       86.41      23.84   3.625 0.000352 ***  
## data$X2001_FC -29826.04   5140.22  -5.802 2.02e-08 ***  
## data$X2001_TER  6223.48   5597.53   1.112 0.267307  
## data$X2008_FC 12054.45   4966.05   2.427 0.015933 *  
## data$X2009_SF 13821.54   5842.06   2.366 0.018770 *  
## data$X2010_ER  3311.83  10613.59   0.312 0.755279  
## data$X2019_CV -60489.47   6087.86  -9.936 < 2e-16 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 398547851)
##
##      Null deviance: 1.7708e+11  on 251  degrees of freedom
## Residual deviance: 9.7246e+10  on 244  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5715.5
##
## Number of Fisher Scoring iterations: 2

lm_LPA_MAD2 <- glm(data$LPA_MAD_30~data$t+data$X2001_FC+data$X2008_FC+data$X2
009_SF+data$X2019_CV)
summary(lm_LPA_MAD2)

##
## Call:
## glm(formula = data$LPA_MAD_30 ~ data$t + data$X2001_FC + data$X2008_FC +
##      data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -61689  -11957   -1098   12518   70147
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  104389.52   3340.69  31.248 < 2e-16 ***
## data$t         77.00     22.26   3.459 0.000639 ***
## data$X2001_FC -30362.25   5111.68  -5.940 9.69e-09 ***
## data$X2008_FC  11238.77   4879.99   2.303 0.022112 *
## data$X2009_SF  14356.03   4964.55   2.892 0.004174 **
## data$X2019_CV -59870.70   6052.67  -9.892 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 397457345)
##
##      Null deviance: 1.7708e+11  on 251  degrees of freedom
## Residual deviance: 9.7775e+10  on 246  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5712.8
##
## Number of Fisher Scoring iterations: 2

lm_LPA_MAD3 <- lm(data$LPA_MAD_30~data$t+data$X2001_FC+data$X2008_FC+data$X2
009_SF+data$X2019_CV)
summary(lm_LPA_MAD3)

##
## Call:

```

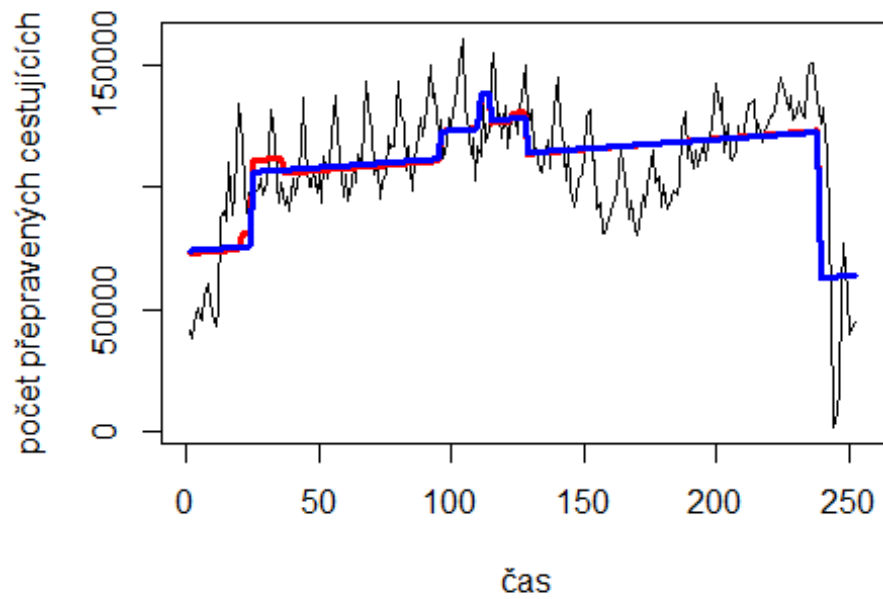
```

## lm(formula = data$LPA_MAD_30 ~ data$t + data$X2001_FC + data$X2008_FC +
##     data$X2009_SF + data$X2019_CV)
##
## Residuals:
##   Min      1Q  Median      3Q      Max
## -61689 -11957  -1098   12518   70147
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  104389.52   3340.69  31.248 < 2e-16 ***
## data$t         77.00      22.26   3.459 0.000639 ***
## data$X2001_FC -30362.25   5111.68  -5.940 9.69e-09 ***
## data$X2008_FC  11238.77   4879.99   2.303 0.022112 *
## data$X2009_SF  14356.03   4964.55   2.892 0.004174 **
## data$X2019_CV -59870.70   6052.67  -9.892 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 19940 on 246 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared:  0.4478, Adjusted R-squared:  0.4366
## F-statistic: 39.91 on 5 and 246 DF,  p-value: < 2.2e-16

plot(data$LPA_MAD_30, type="l", xlab = "čas", ylab = "počet přepravených cest
ujících", main = "LPA-MAD")
fit <- c(rep(0,0), lm_LPA_MAD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_LPA_MAD2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

LPA-MAD

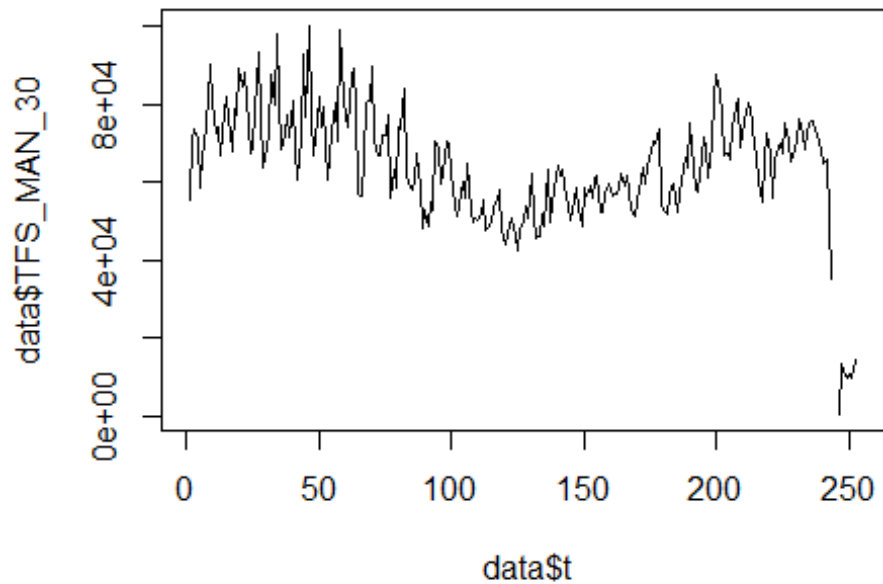


Spojeni letiště

Tenerife -> letiště Manchester

```
data$TFS_MAN_30 <- data$TFS_MAN/data$days * 30
```

```
plot(data$TFS_MAN_30~data$t, t="l")
```



```
lm_TFS_MAN1 <- glm(data$TFS_MAN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_TFS_MAN1)
```

```
##
## Call:
## glm(formula = data$TFS_MAN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -30354   -8017    -333    6217   37271
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    70181.01    2087.28  33.623 < 2e-16 ***
## data$t         -29.57      13.56  -2.180  0.03019 *
## data$X2001_FC   3886.41    2924.53   1.329  0.18513
## data$X2001_TER  8448.46    3184.71   2.653  0.00851 **
## data$X2008_FC -7902.99    2825.43  -2.797  0.00557 **
## data$X2009_SF -13341.27   3323.84  -4.014 7.97e-05 ***
## data$X2010_ER  -5742.13    6038.59  -0.951  0.34260
## data$X2019_CV -32237.34    3679.60  -8.761 3.44e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 129011086)
```

```

##
## Null deviance: 5.5310e+10 on 249 degrees of freedom
## Residual deviance: 3.1221e+10 on 242 degrees of freedom
## (6 observations deleted due to missingness)
## AIC: 5388.2
##
## Number of Fisher Scoring iterations: 2

lm_TFS_MAN2 <- glm(data$TFS_MAN_30~data$t+data$X2001_TER+data$X2008_FC+data$X
2009_SF+data$X2019_CV)
summary(lm_TFS_MAN2)

##
## Call:
## glm(formula = data$TFS_MAN_30 ~ data$t + data$X2001_TER + data$X2008_FC +
## data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -30350 -8250 -623 6923 37208
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 71781.60 1692.87 42.402 < 2e-16 ***
## data$t -39.10 11.54 -3.389 0.000817 ***
## data$X2001_TER 8091.04 3176.01 2.548 0.011463 *
## data$X2008_FC -8078.22 2770.27 -2.916 0.003875 **
## data$X2009_SF -15359.28 2827.05 -5.433 1.34e-07 ***
## data$X2019_CV -31497.04 3645.65 -8.640 7.51e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 129382108)
##
## Null deviance: 5.5310e+10 on 249 degrees of freedom
## Residual deviance: 3.1569e+10 on 244 degrees of freedom
## (6 observations deleted due to missingness)
## AIC: 5387
##
## Number of Fisher Scoring iterations: 2

lm_TFS_MAN3 <- lm(data$TFS_MAN_30~data$t+data$X2001_TER+data$X2008_FC+data$X2
009_SF+data$X2019_CV)
summary(lm_TFS_MAN3)

##
## Call:
## lm(formula = data$TFS_MAN_30 ~ data$t + data$X2001_TER + data$X2008_FC +
## data$X2009_SF + data$X2019_CV)
##
## Residuals:

```



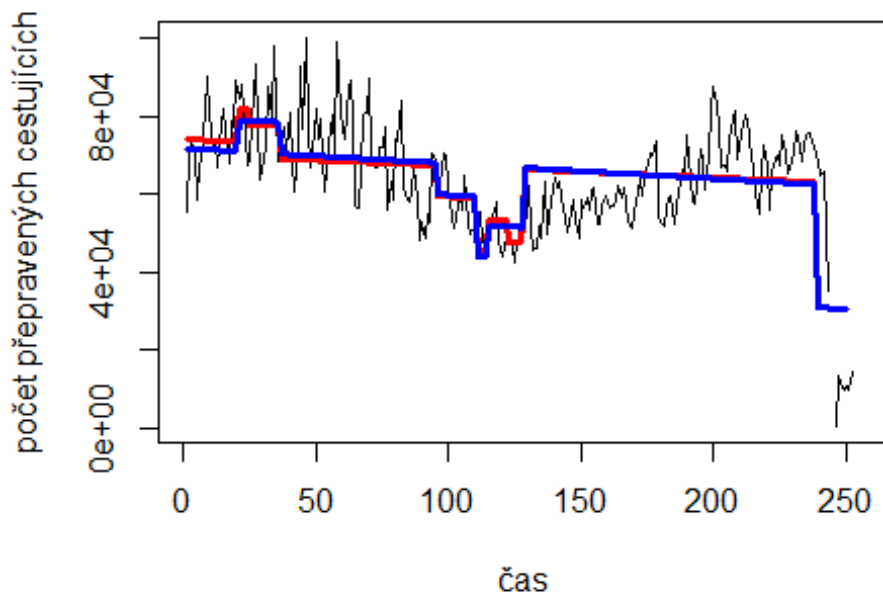
```

##      Min      1Q  Median      3Q      Max
## -30350 -8250   -623    6923   37208
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    71781.60    1692.87  42.402 < 2e-16 ***
## data$t         -39.10      11.54  -3.389 0.000817 ***
## data$X2001_TER  8091.04    3176.01   2.548 0.011463 *
## data$X2008_FC -8078.22    2770.27  -2.916 0.003875 **
## data$X2009_SF -15359.28    2827.05  -5.433 1.34e-07 ***
## data$X2019_CV -31497.04    3645.65  -8.640 7.51e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11370 on 244 degrees of freedom
## (6 observations deleted due to missingness)
## Multiple R-squared:  0.4292, Adjusted R-squared:  0.4175
## F-statistic: 36.7 on 5 and 244 DF, p-value: < 2.2e-16

plot(data$TFS_MAN_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "TFS-MAN")
fit <- c(rep(0,0), lm_TFS_MAN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_TFS_MAN2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

TFS-MAN

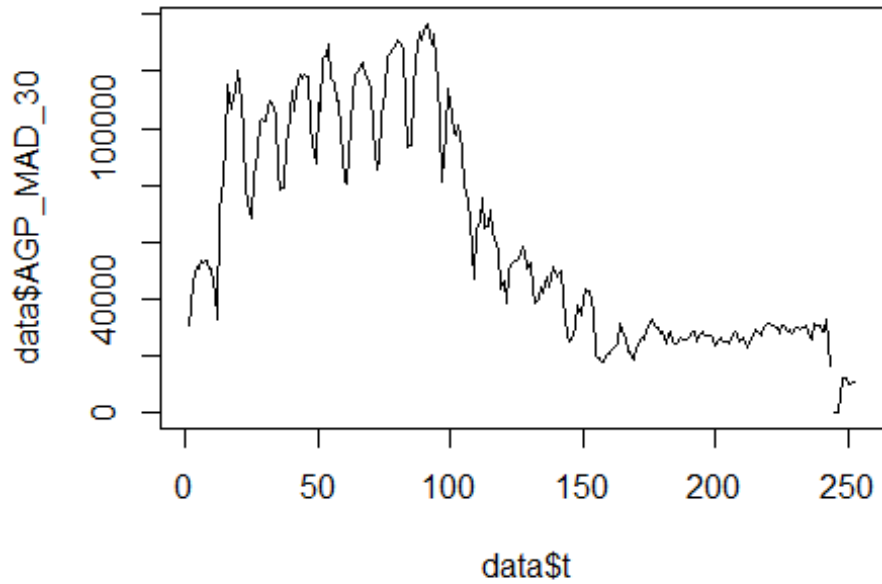


Malaga -> letiště Madrid

Spojeni letiště

```
data$AGP_MAD_30 <- data$AGP_MAD/data$days * 30
```

```
plot(data$AGP_MAD_30~data$t, t="l")
```



```
lm_AGP_MAD1 <- glm(data$TFS_MAN_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
```

```
summary(lm_AGP_MAD1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$TFS_MAN_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -30354   -8017    -333    6217   37271
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)    70181.01    2087.28  33.623 < 2e-16 ***  
## data$t         -29.57      13.56  -2.180  0.03019 *  
## data$X2001_FC   3886.41    2924.53   1.329  0.18513  
## data$X2001_TER  8448.46    3184.71   2.653  0.00851 **  
## data$X2008_FC -7902.99    2825.43  -2.797  0.00557 **  
## data$X2009_SF -13341.27    3323.84  -4.014  7.97e-05 ***  
## data$X2010_ER -5742.13    6038.59  -0.951  0.34260  
## data$X2019_CV -32237.34    3679.60 -8.761  3.44e-16 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 129011086)
##
## Null deviance: 5.5310e+10 on 249 degrees of freedom
## Residual deviance: 3.1221e+10 on 242 degrees of freedom
## (6 observations deleted due to missingness)
## AIC: 5388.2
##
## Number of Fisher Scoring iterations: 2

lm_AGP_MAD2 <- glm(data$TFS_MAN_30~data$t+data$X2001_TER+data$X2008_FC+data$X
2009_SF+data$X2019_CV)
summary(lm_AGP_MAD2)

##
## Call:
## glm(formula = data$TFS_MAN_30 ~ data$t + data$X2001_TER + data$X2008_FC +
## data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -30350   -8250    -623    6923   37208
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    71781.60   1692.87  42.402 < 2e-16 ***
## data$t         -39.10     11.54  -3.389 0.000817 ***
## data$X2001_TER  8091.04   3176.01   2.548 0.011463 *
## data$X2008_FC  -8078.22   2770.27  -2.916 0.003875 **
## data$X2009_SF -15359.28   2827.05  -5.433 1.34e-07 ***
## data$X2019_CV -31497.04   3645.65  -8.640 7.51e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 129382108)
##
## Null deviance: 5.5310e+10 on 249 degrees of freedom
## Residual deviance: 3.1569e+10 on 244 degrees of freedom
## (6 observations deleted due to missingness)
## AIC: 5387
##
## Number of Fisher Scoring iterations: 2

lm_AGP_MAD3 <- lm(data$TFS_MAN_30~data$t+data$X2001_TER+data$X2008_FC+data$X2
009_SF+data$X2019_CV)
summary(lm_AGP_MAD3)

##
## Call:

```

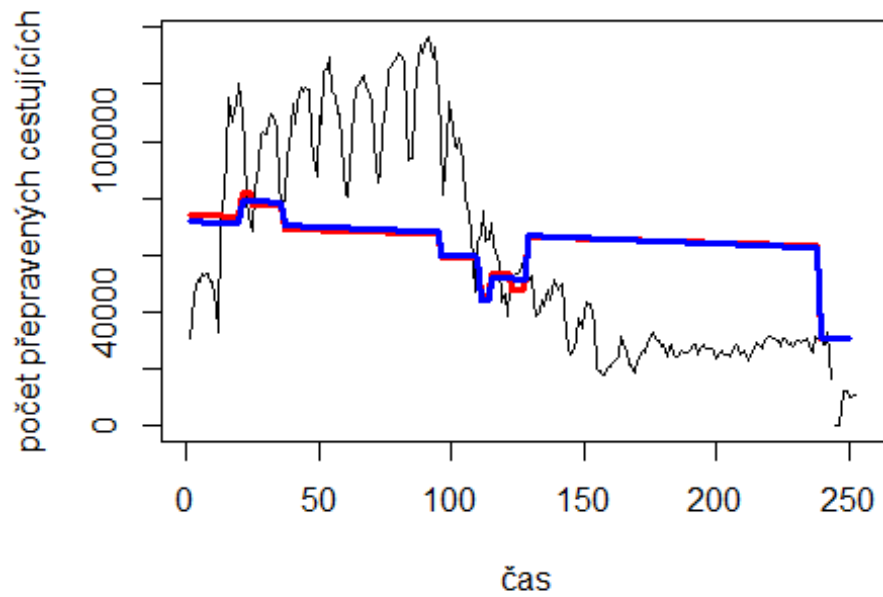
```

## lm(formula = data$TFS_MAN_30 ~ data$t + data$X2001_TER + data$X2008_FC +
##   data$X2009_SF + data$X2019_CV)
##
## Residuals:
##   Min      1Q  Median      3Q      Max
## -30350  -8250   -623   6923  37208
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   71781.60    1692.87  42.402 < 2e-16 ***
## data$t        -39.10      11.54   -3.389 0.000817 ***
## data$X2001_TER  8091.04    3176.01   2.548 0.011463 *
## data$X2008_FC -8078.22    2770.27  -2.916 0.003875 **
## data$X2009_SF -15359.28    2827.05  -5.433 1.34e-07 ***
## data$X2019_CV -31497.04    3645.65  -8.640 7.51e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11370 on 244 degrees of freedom
## (6 observations deleted due to missingness)
## Multiple R-squared:  0.4292, Adjusted R-squared:  0.4175
## F-statistic: 36.7 on 5 and 244 DF, p-value: < 2.2e-16

plot(data$AGP_MAD_30, type="l", xlab = "čas", ylab = "počet přepravených cestujíc
ích", main = "AGP-MAD")
fit <- c(rep(0,0), lm_AGP_MAD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_AGP_MAD2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

AGP-MAD

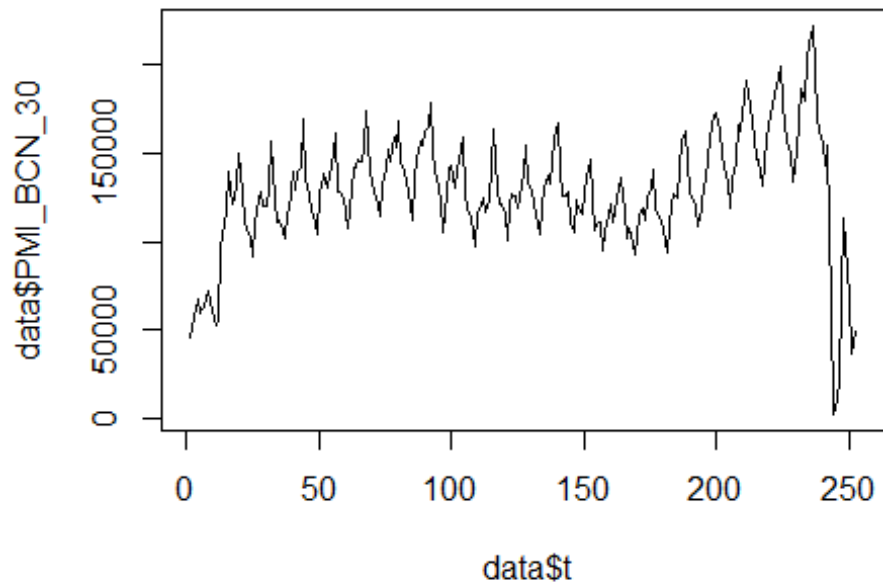


Spojeni letiště

Malorca -> letiště Barcelona

```
data$PMI_BCN_30 <- data$PMI_BCN/data$days * 30
```

```
plot(data$PMI_BCN_30~data$t, t="l")
```



```
lm_PMI_BCN1 <- glm(data$PMI_BCN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_PMI_BCN1)

##
## Call:
## glm(formula = data$PMI_BCN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -78085  -18102   -2010   16129   78207
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  118636.01   4889.06  24.266 < 2e-16 ***
## data$t       139.99     31.78   4.406 1.58e-05 ***
## data$X2001_FC -31251.46   6851.01  -4.562 8.03e-06 ***
## data$X2001_TER  3171.55   7460.74   0.425  0.671
## data$X2008_FC -6783.70   6552.96  -1.035  0.302
## data$X2009_SF -6548.26   6645.26  -0.985  0.325
## data$X2019_CV -72733.28   8114.47  -8.963 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 708095686)
##
```

```

##      Null deviance: 2.7280e+11  on 251  degrees of freedom
## Residual deviance: 1.7348e+11  on 245  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5859.3
##
## Number of Fisher Scoring iterations: 2

lm_PMI_BCN2 <- glm(data$PMI_BCN_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_PMI_BCN2)

##
## Call:
## glm(formula = data$PMI_BCN_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -78083  -17439   -1497   16594   78216
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  117481.87   4273.02  27.494 < 2e-16 ***
## data$t       141.35     29.41   4.807 2.66e-06 ***
## data$X2001_FC -29585.74   6710.13  -4.409 1.55e-05 ***
## data$X2019_CV -71913.14   8066.71  -8.915 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 707395923)
##
##      Null deviance: 2.7280e+11  on 251  degrees of freedom
## Residual deviance: 1.7543e+11  on 248  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5856.1
##
## Number of Fisher Scoring iterations: 2

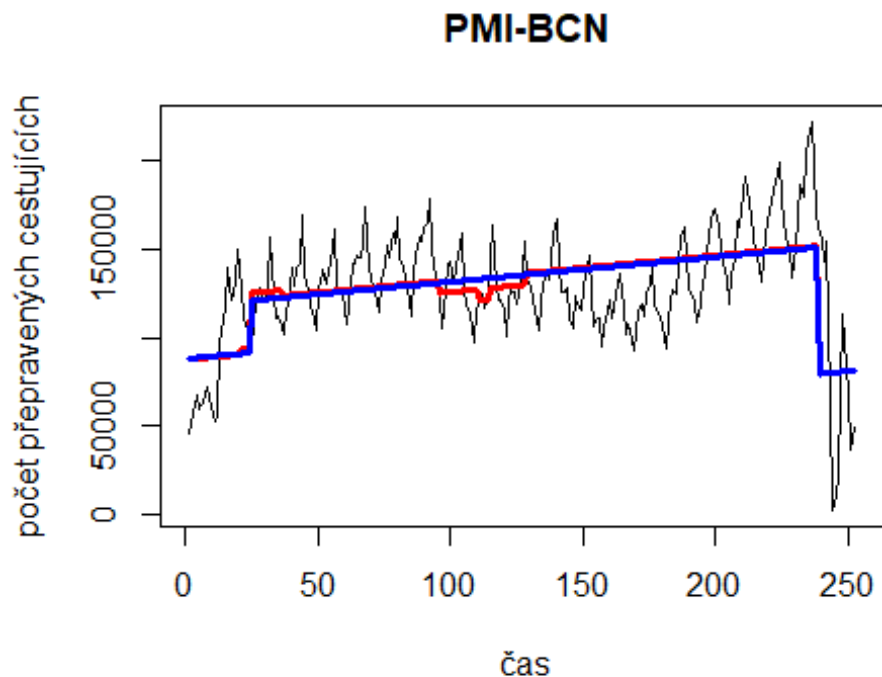
lm_PMI_BCN3 <- lm(data$PMI_BCN_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_PMI_BCN3)

##
## Call:
## lm(formula = data$PMI_BCN_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -78083  -17439   -1497   16594   78216
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  117481.87   4273.02  27.494 < 2e-16 ***
## data$t       141.35     29.41   4.807 2.66e-06 ***

```

```
## data$X2001_FC -29585.74    6710.13  -4.409 1.55e-05 ***
## data$X2019_CV -71913.14    8066.71  -8.915 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 26600 on 248 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared:  0.3569, Adjusted R-squared:  0.3491
## F-statistic: 45.88 on 3 and 248 DF,  p-value: < 2.2e-16

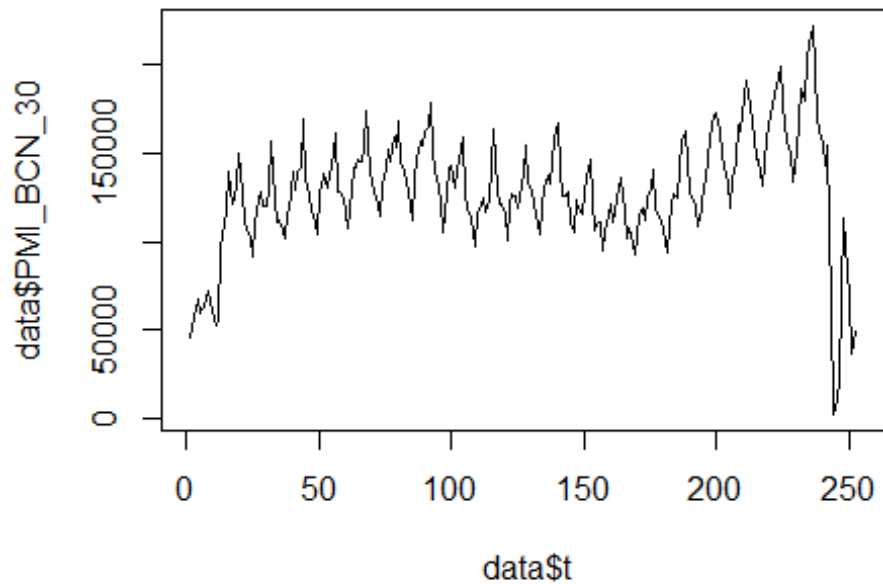
plot(data$PMI_BCN_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "PMI-BCN")
fit <- c(rep(0,0), lm_PMI_BCN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_PMI_BCN2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Alicante -> letiště Gatwick

```
data$PMI_BCN_30 <- data$PMI_BCN/data$days * 30
plot(data$PMI_BCN_30~data$t, t="l")
```

```
lm_PMI_BCN1 <- glm(data$PMI_BCN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_PMI_BCN1)

##
## Call:
## glm(formula = data$PMI_BCN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -78085  -18120   -1877    16109    78206
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  118659.74   4899.48  24.219 < 2e-16 ***
## data$t       139.94      31.84   4.396 1.65e-05 ***
## data$X2001_FC -31271.77   6864.75  -4.555 8.26e-06 ***
## data$X2001_TER  3154.06   7475.48   0.422  0.673
## data$X2008_FC -7008.92   6632.14  -1.057  0.292
## data$X2009_SF -5570.79   7802.05  -0.714  0.476
## data$X2010_ER -3406.56  14174.41  -0.240  0.810
## data$X2019_CV -72746.97   8130.32  -8.948 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 710829451)
```

```

##
## Null deviance: 2.7280e+11 on 251 degrees of freedom
## Residual deviance: 1.7344e+11 on 244 degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5861.3
##
## Number of Fisher Scoring iterations: 2

lm_PMI_BCN2 <- glm(data$PMI_BCN_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_PMI_BCN2)

##
## Call:
## glm(formula = data$PMI_BCN_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -78083 -17439 -1497 16594 78216
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 117481.87 4273.02 27.494 < 2e-16 ***
## data$t 141.35 29.41 4.807 2.66e-06 ***
## data$X2001_FC -29585.74 6710.13 -4.409 1.55e-05 ***
## data$X2019_CV -71913.14 8066.71 -8.915 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 707395923)
##
## Null deviance: 2.7280e+11 on 251 degrees of freedom
## Residual deviance: 1.7543e+11 on 248 degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5856.1
##
## Number of Fisher Scoring iterations: 2

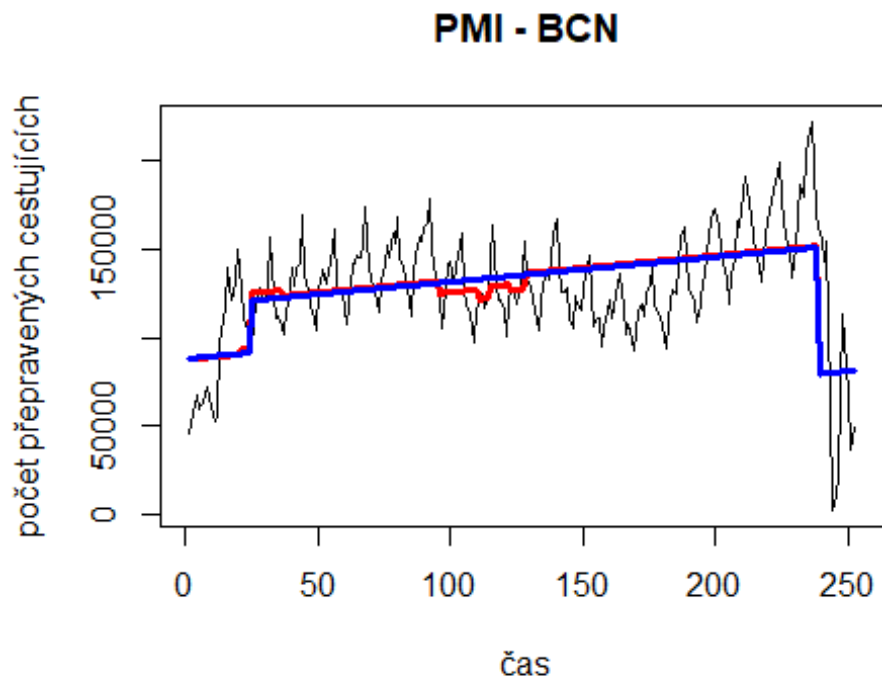
lm_PMI_BCN3 <- lm(data$PMI_BCN_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_PMI_BCN3)

##
## Call:
## lm(formula = data$PMI_BCN_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -78083 -17439 -1497 16594 78216
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 117481.87 4273.02 27.494 < 2e-16 ***

```

```
## data$t          141.35      29.41   4.807 2.66e-06 ***
## data$X2001_FC  -29585.74   6710.13  -4.409 1.55e-05 ***
## data$X2019_CV -71913.14   8066.71  -8.915 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 26600 on 248 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared:  0.3569, Adjusted R-squared:  0.3491
## F-statistic: 45.88 on 3 and 248 DF,  p-value: < 2.2e-16

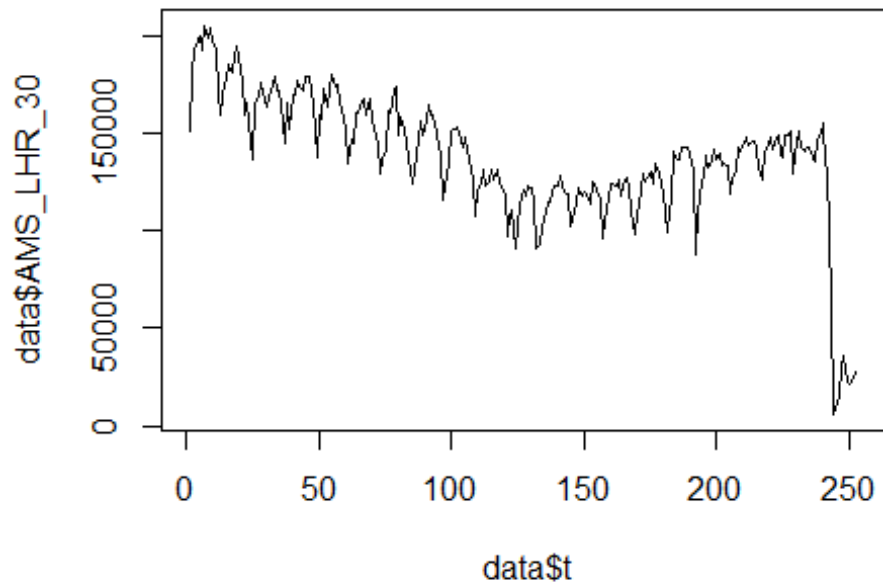
plot(data$PMI_BCN_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "PMI - BCN")
fit <- c(rep(0,0), lm_PMI_BCN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_PMI_BCN2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



4. Spojení letišť

Amsterdam Airport Schipol -> letiště London Heathrow Airport

```
data$AMS_LHR_30 <- data$AMS_LHR/data$days * 30
plot(data$AMS_LHR_30~data$t, t="l")
```



```
lm_AMS_LHR1 <- glm(data$AMS_LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_AMS_LHR1)
```

```
##
## Call:
## glm(formula = data$AMS_LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -53370  -15069   3186   13346   95997
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  163966.04   3860.37  42.474 < 2e-16 ***
## data$t       -177.88     25.08  -7.091 1.43e-11 ***
## data$X2001_FC  20892.08   5408.82   3.863 0.000144 ***
## data$X2001_TER  2388.83   5890.03   0.406 0.685413
## data$X2008_FC -6958.58   5225.55  -1.332 0.184219
## data$X2009_SF -18964.89   6147.34  -3.085 0.002270 **
## data$X2010_ER -14978.93   11168.20  -1.341 0.181099
## data$X2019_CV -61321.19   6405.98  -9.572 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 441288167)
```

```

##
##      Null deviance: 2.7902e+11  on 251  degrees of freedom
## Residual deviance: 1.0767e+11  on 244  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5741.1
##
## Number of Fisher Scoring iterations: 2

lm_AMS_LHR2 <- glm(data$AMS_LHR_30~data$t+data$X2001_FC+data$X2009_SF+data$X2
019_CV)
summary(lm_AMS_LHR2)

##
## Call:
## glm(formula = data$AMS_LHR_30 ~ data$t + data$X2001_FC + data$X2009_SF +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -53370  -14711   3481   13456   95997
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  163573.01   3433.65  47.638 < 2e-16 ***
## data$t       -177.83     23.29  -7.636 4.89e-13 ***
## data$X2001_FC 21682.61   5338.18   4.062 6.54e-05 ***
## data$X2009_SF -24285.10   5187.22  -4.682 4.70e-06 ***
## data$X2019_CV -60940.64   6382.98  -9.547 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 442057202)
##
##      Null deviance: 2.7902e+11  on 251  degrees of freedom
## Residual deviance: 1.0919e+11  on 247  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5738.6
##
## Number of Fisher Scoring iterations: 2

lm_AMS_LHR3 <- lm(data$AMS_LHR_30~data$t+data$X2001_FC+data$X2009_SF+data$X20
19_CV)
summary(lm_AMS_LHR3)

##
## Call:
## lm(formula = data$AMS_LHR_30 ~ data$t + data$X2001_FC + data$X2009_SF +
##      data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

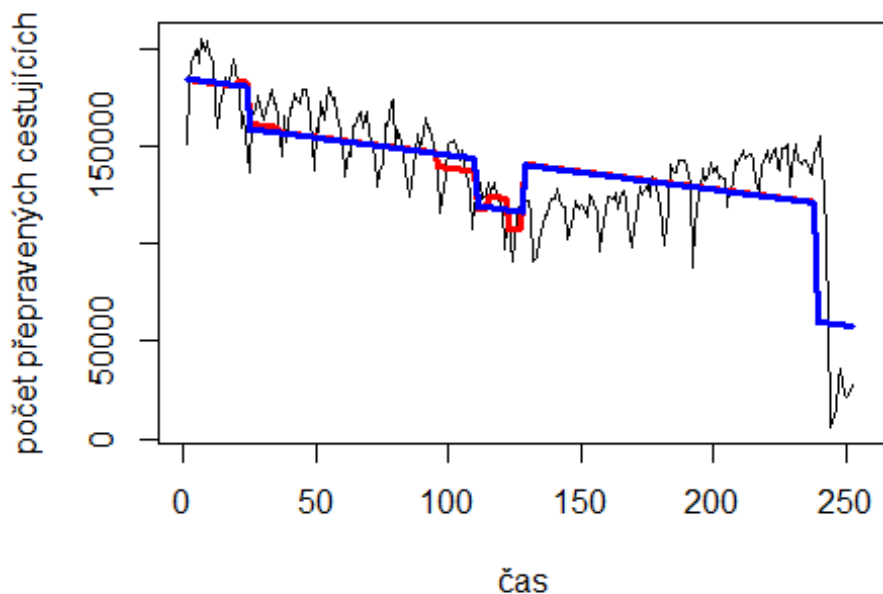
```

## -53370 -14711 3481 13456 95997
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 163573.01 3433.65 47.638 < 2e-16 ***
## data$t -177.83 23.29 -7.636 4.89e-13 ***
## data$X2001_FC 21682.61 5338.18 4.062 6.54e-05 ***
## data$X2009_SF -24285.10 5187.22 -4.682 4.70e-06 ***
## data$X2019_CV -60940.64 6382.98 -9.547 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21030 on 247 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared: 0.6087, Adjusted R-squared: 0.6023
## F-statistic: 96.04 on 4 and 247 DF, p-value: < 2.2e-16

plot(data$AMS_LHR_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="AMS-LHR")
fit <- c(rep(0,0), lm_AMS_LHR1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_AMS_LHR2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

AMS-LHR

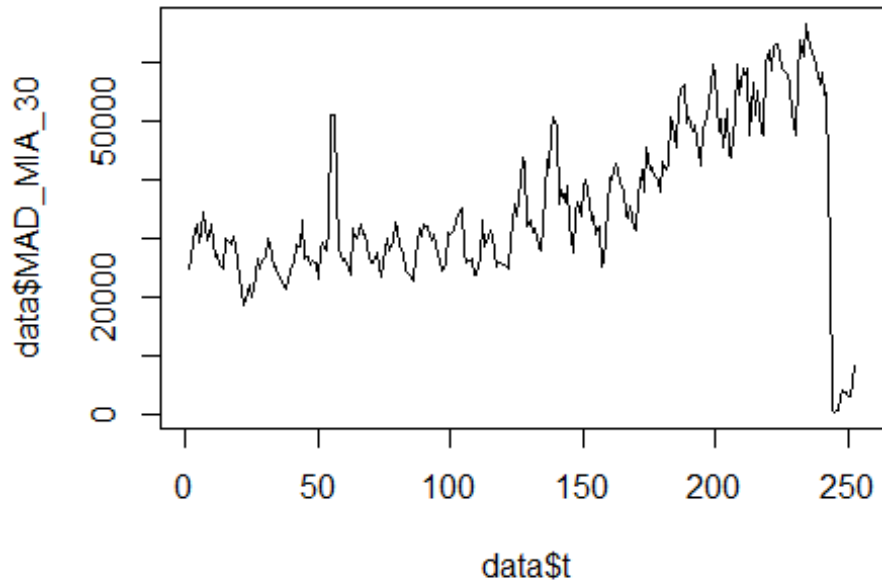


Madrid -> letiště Miami

Spojeni letiště

```
data$MAD_MIA_30 <- data$MAD_MIA/data$days * 30
```

```
plot(data$MAD_MIA_30~data$t, t="l")
```



```
lm_MAD_MIA1 <- glm(data$MAD_MIA_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MAD_MIA1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$MAD_MIA_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
## -19450   -4304    -169     3667   39484
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   17367.62   1626.84  10.676 < 2e-16 ***
## data$t         158.72     10.42  15.235 < 2e-16 ***
## data$X2001_FC  8135.87    2213.77   3.675 0.000293 ***
## data$X2001_TER  -34.32    2348.17  -0.015 0.988349
## data$X2003_SARS  688.41    3185.47   0.216 0.829083
## data$X2008_FC -4204.25    2091.20  -2.010 0.045489 *
## data$X2009_SF -5826.06    2452.55  -2.376 0.018302 *
```

```

## data$X2010_ER      4556.04      4450.07      1.024 0.306942
## data$X2019_CV     -36561.34      2559.62     -14.284 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 70058092)
##
##      Null deviance: 4.5243e+10  on 251  degrees of freedom
## Residual deviance: 1.7024e+10  on 243  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5278.3
##
## Number of Fisher Scoring iterations: 2

lm_MAD_MIA2 <- glm(data$MAD_MIA_30~data$t+data$X2001_FC+data$X2008_FC+data$X2
009_SF+data$X2019_CV)
summary(lm_MAD_MIA2)

##
## Call:
## glm(formula = data$MAD_MIA_30 ~ data$t + data$X2001_FC + data$X2008_FC +
##      data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -19451   -4234    -113    3641   39481
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   17502.87   1397.10  12.528 < 2e-16 ***
## data$t         158.09     9.31  16.982 < 2e-16 ***
## data$X2001_FC  8002.75   2137.75   3.744 0.000226 ***
## data$X2008_FC -4543.15   2040.85  -2.226 0.026914 *
## data$X2009_SF -4545.34   2076.21  -2.189 0.029519 *
## data$X2019_CV -36542.34   2531.28 -14.436 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 69514582)
##
##      Null deviance: 4.5243e+10  on 251  degrees of freedom
## Residual deviance: 1.7101e+10  on 246  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5273.4
##
## Number of Fisher Scoring iterations: 2

lm_MAD_MIA3 <- lm(data$MAD_MIA_30~data$t+data$X2001_FC+data$X2008_FC+data$X20
09_SF+data$X2019_CV)
summary(lm_MAD_MIA3)

```



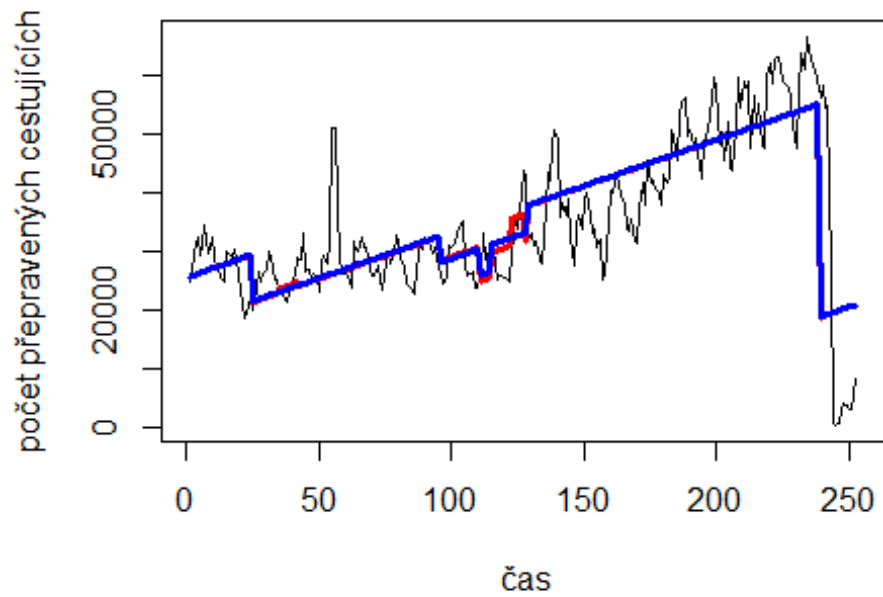
```

##
## Call:
## lm(formula = data$MAD_MIA_30 ~ data$t + data$X2001_FC + data$X2008_FC +
##     data$X2009_SF + data$X2019_CV)
##
## Residuals:
##     Min       1Q   Median       3Q      Max
## -19451  -4234   -113    3641   39481
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   17502.87   1397.10  12.528 < 2e-16 ***
## data$t         158.09     9.31  16.982 < 2e-16 ***
## data$X2001_FC  8002.75   2137.75   3.744 0.000226 ***
## data$X2008_FC -4543.15   2040.85  -2.226 0.026914 *
## data$X2009_SF -4545.34   2076.21  -2.189 0.029519 *
## data$X2019_CV -36542.34   2531.28 -14.436 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 8338 on 246 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared:  0.622, Adjusted R-squared:  0.6143
## F-statistic: 80.97 on 5 and 246 DF,  p-value: < 2.2e-16

plot(data$MAD_MIA_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "MAD-MIA")
fit <- c(rep(0,0), lm_MAD_MIA1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_MAD_MIA2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

MAD-MIA

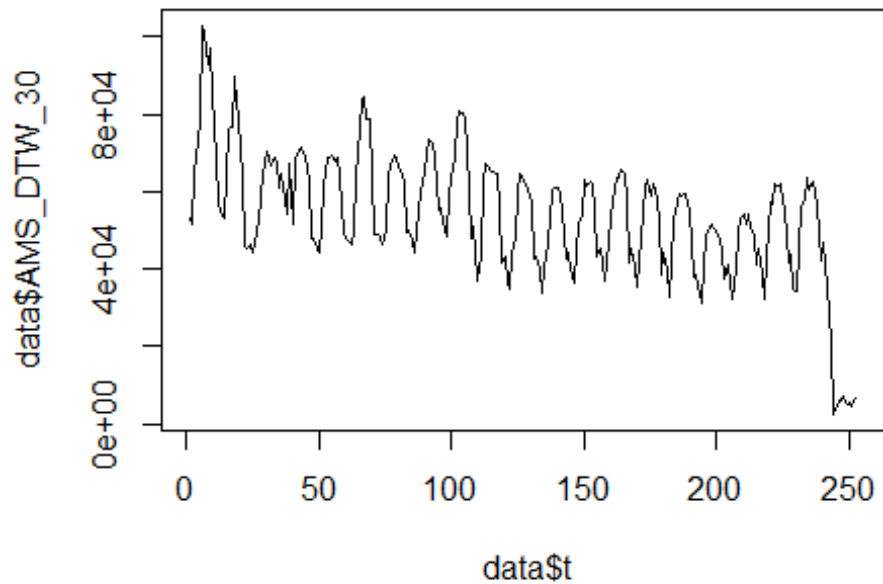


Spojeni 4. Evropa

- USA letiště Amsterdam -> letiště Detroit

```
data$AMS_DTW_30 <- data$AMS_DTW/data$days * 30
```

```
plot(data$AMS_DTW_30~data$t, t="l")
```



```
lm_AMS_DTW1 <- glm(data$AMS_DTW_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_AMS_DTW1)
```

```
##
## Call:
## glm(formula = data$AMS_DTW_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -24280  -10848    1537    9052   30022
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   66134.61   2297.75  28.782 < 2e-16 ***
## data$t         -85.39     14.71  -5.804 2.02e-08 ***
## data$X2001_FC   7116.69   3126.74   2.276  0.0237 *
## data$X2001_TER -7046.85   3316.57  -2.125  0.0346 *
## data$X2003_SARS  634.87   4499.17   0.141  0.8879
## data$X2008_FC   4222.36   2953.62   1.430  0.1541
## data$X2009_SF  -2857.62   3464.00  -0.825  0.4102
## data$X2010_ER   3130.83   6285.30   0.498  0.6189
## data$X2019_CV -28459.66   3615.22  -7.872 1.15e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 139758063)
##
## Null deviance: 6.6482e+10 on 251 degrees of freedom
## Residual deviance: 3.3961e+10 on 243 degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5452.3
##
## Number of Fisher Scoring iterations: 2

lm_AMS_DTW2 <- glm(data$AMS_DTW_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2019_CV)
summary(lm_AMS_DTW2)

##
## Call:
## glm(formula = data$AMS_DTW_30 ~ data$t + data$X2001_FC + data$X2001_TER +
## data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -21567 -10670 1246 8718 29945
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 66785.40 2055.00 32.499 < 2e-16 ***
## data$t -88.44 13.84 -6.388 8.30e-10 ***
## data$X2001_FC 6561.58 2979.25 2.202 0.0286 *
## data$X2001_TER -7392.81 3270.44 -2.260 0.0247 *
## data$X2019_CV -28363.71 3590.98 -7.899 9.27e-14 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 138845584)
##
## Null deviance: 6.6482e+10 on 251 degrees of freedom
## Residual deviance: 3.4295e+10 on 247 degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5446.8
##
## Number of Fisher Scoring iterations: 2

lm_AMS_DTW3 <- lm(data$AMS_DTW_30~data$t+data$X2001_FC+data$X2001_TER+data$X2
019_CV)
summary(lm_AMS_DTW3)

##
## Call:
## lm(formula = data$AMS_DTW_30 ~ data$t + data$X2001_FC + data$X2001_TER +
## data$X2019_CV)
##

```

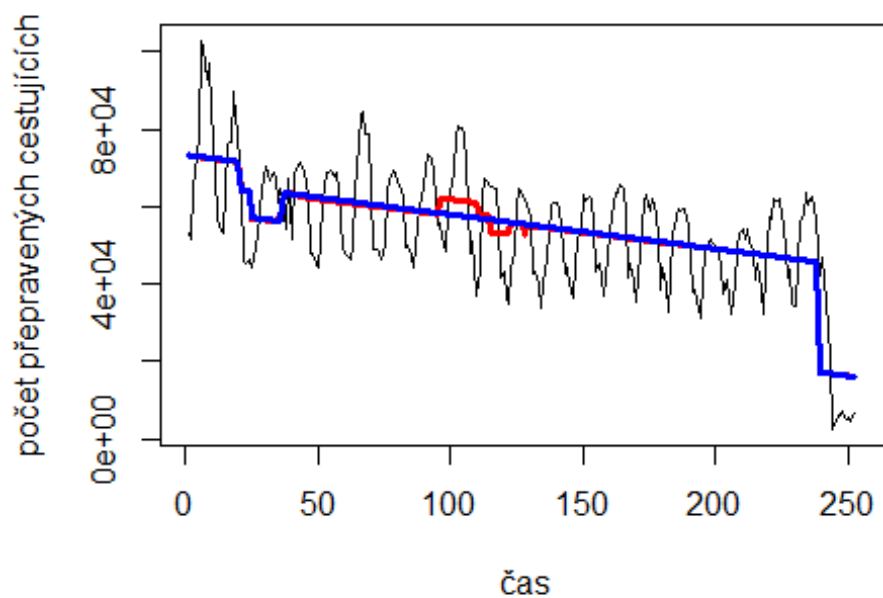
```

## Residuals:
##   Min     1Q Median     3Q      Max
## -21567 -10670  1246   8718  29945
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   66785.40   2055.00   32.499 < 2e-16 ***
## data$t        -88.44     13.84   -6.388 8.30e-10 ***
## data$X2001_FC  6561.58   2979.25    2.202  0.0286 *
## data$X2001_TER -7392.81   3270.44   -2.260  0.0247 *
## data$X2019_CV -28363.71   3590.98   -7.899 9.27e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11780 on 247 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared:  0.4841, Adjusted R-squared:  0.4758
## F-statistic: 57.95 on 4 and 247 DF,  p-value: < 2.2e-16

plot(data$AMS_DTW_30, type="l",xlab="čas",ylab="počet přepravených cestujících
h",main="AMS-DTW")
fit <- c(rep(0,0), lm_AMS_DTW1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_AMS_DTW2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

AMS-DTW

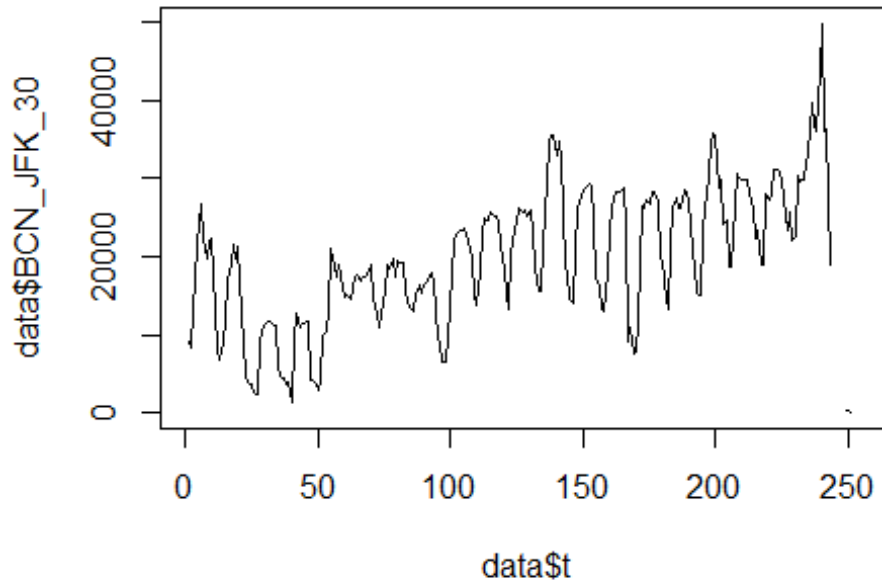


Spojeni 9. Evropa

- USA letiště Barcelona -> letiště John F. Kennedy

```
data$BCN_JFK_30 <- data$BCN_JFK/data$days * 30
```

```
plot(data$BCN_JFK_30~data$t, t="l")
```



```
lm_BCN_JFK1 <- glm(data$BCN_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_BCN_JFK1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$BCN_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
## -23609.9  -3776.1    869.1   3585.0  26921.0
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9487.614   1311.103   7.236 6.36e-12 ***
## data$t         83.208     8.396   9.910 < 2e-16 ***
## data$X2001_FC  5572.903   1784.078   3.124 0.00201 **
## data$X2001_TER -4603.384   1892.375  -2.433 0.01573 *
## data$X2003_SARS -5751.576   2567.146  -2.240 0.02599 *
## data$X2008_FC  -805.382   1685.278  -0.478 0.63317
## data$X2009_SF  2978.941   1976.488   1.507 0.13309
```

```

## data$X2010_ER      1129.302    3586.264    0.315    0.75312
## data$X2019_CV     -6626.865    2583.884   -2.565    0.01094 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 45499752)
##
##      Null deviance: 1.9483e+10  on 245  degrees of freedom
## Residual deviance: 1.0783e+10  on 237  degrees of freedom
## (10 observations deleted due to missingness)
## AIC: 5046.7
##
## Number of Fisher Scoring iterations: 2

lm_BCN_JFK2 <- glm(data$BCN_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2019_CV)
summary(lm_BCN_JFK2)

##
## Call:
## glm(formula = data$BCN_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -23604.2  -3976.5    918.4   3945.4  26917.2
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9828.752   1237.898   7.940 7.78e-14 ***
## data$t          82.338     8.238   9.995 < 2e-16 ***
## data$X2001_FC  5277.750   1747.878   3.020 0.00281 **
## data$X2001_TER -4814.078   1878.559  -2.563 0.01100 *
## data$X2003_SARS -6006.562   2553.778  -2.352 0.01948 *
## data$X2019_CV -6755.506   2588.540  -2.610 0.00963 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 45692139)
##
##      Null deviance: 1.9483e+10  on 245  degrees of freedom
## Residual deviance: 1.0966e+10  on 240  degrees of freedom
## (10 observations deleted due to missingness)
## AIC: 5044.9
##
## Number of Fisher Scoring iterations: 2

lm_BCN_JFK3 <- lm(data$BCN_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2
003_SARS+data$X2019_CV)
summary(lm_BCN_JFK3)

```

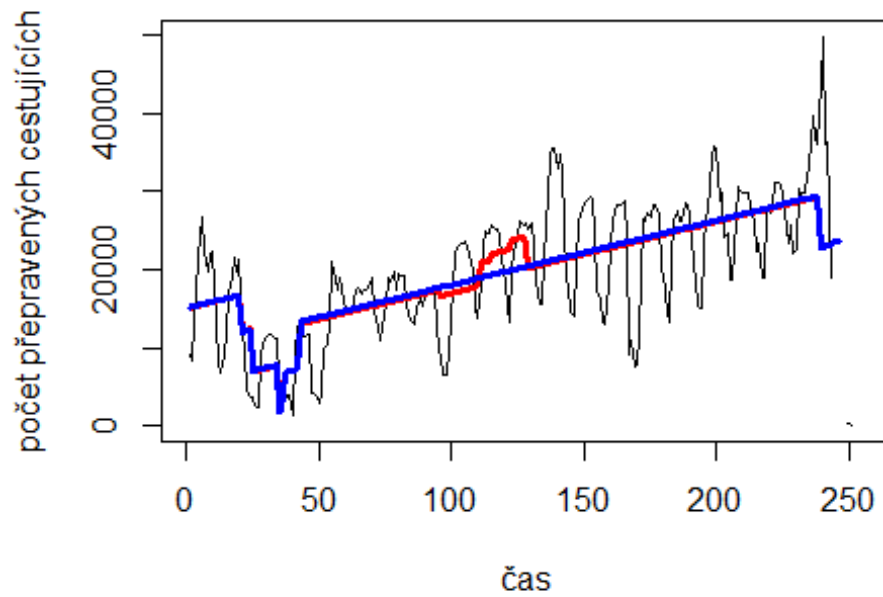
```

##
## Call:
## lm(formula = data$BCN_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -23604.2  -3976.5   918.4   3945.4 26917.2
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9828.752   1237.898   7.940 7.78e-14 ***
## data$t         82.338     8.238   9.995 < 2e-16 ***
## data$X2001_FC  5277.750   1747.878   3.020 0.00281 **
## data$X2001_TER -4814.078   1878.559  -2.563 0.01100 *
## data$X2003_SARS -6006.562   2553.778  -2.352 0.01948 *
## data$X2019_CV -6755.506   2588.540  -2.610 0.00963 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 6760 on 240 degrees of freedom
## (10 observations deleted due to missingness)
## Multiple R-squared:  0.4371, Adjusted R-squared:  0.4254
## F-statistic: 37.28 on 5 and 240 DF,  p-value: < 2.2e-16

plot(data$BCN_JFK_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="BCN-JFK")
fit <- c(rep(0,0), lm_BCN_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_BCN_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```


BCN-JFK

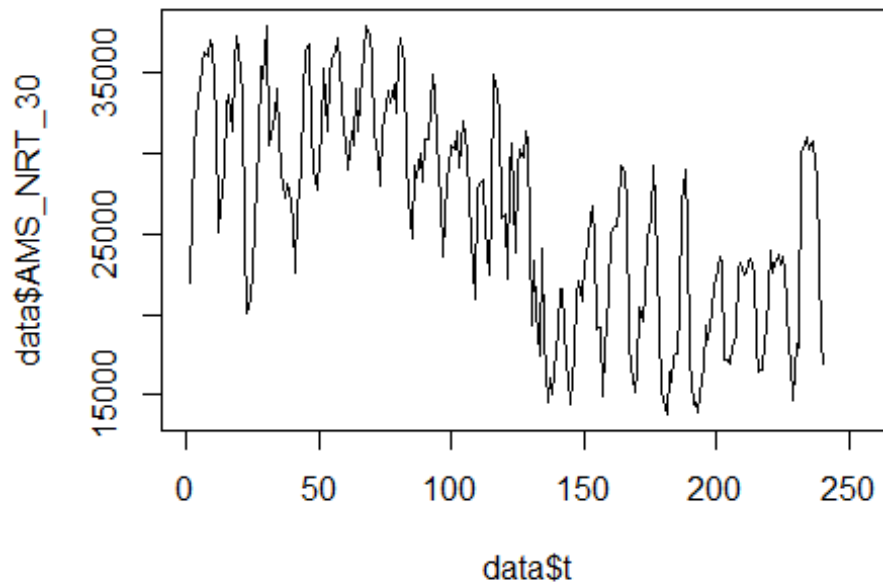


Spojeni letiště

Amsterdam -> letiště Narita

```
data$AMS_NRT_30 <- data$AMS_NRT/data$days * 30
```

```
plot(data$AMS_NRT_30~data$t, t="l")
```



```
lm_AMS_NRT1 <- glm(data$AMS_NRT_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2010_ER+data$X2012_MERS+data$X2019_CV)
summary(lm_AMS_NRT1)
```

```
##
## Call:
## glm(formula = data$AMS_NRT_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2010_ER + data$X2012_MERS +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -11171.8  -3412.8   112.1   3558.2  12706.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   36031.435    937.364   38.439 < 2e-16 ***
## data$t        -75.799      6.117  -12.391 < 2e-16 ***
## data$X2001_FC -3493.638   1280.623  -2.728  0.00686 **
## data$X2001_TER -2686.916   1360.398  -1.975  0.04945 *
## data$X2003_SARS -5165.041   1846.012  -2.798  0.00558 **
## data$X2008_FC  -538.929   1195.520  -0.451  0.65256
## data$X2010_ER  2165.732   2206.139   0.982  0.32728
## data$X2012_MERS -1068.079   1782.081  -0.599  0.54953
## data$X2019_CV  -148.290   3507.335  -0.042  0.96631
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 23585794)
##
## Null deviance: 1.0304e+10 on 239 degrees of freedom
## Residual deviance: 5.4483e+09 on 231 degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 4766.2
##
## Number of Fisher Scoring iterations: 2

lm_AMS_NRT2 <- glm(data$AMS_NRT_30~data$t+data$X2001_FC+data$X2003_SARS)
summary(lm_AMS_NRT2)

##
## Call:
## glm(formula = data$AMS_NRT_30 ~ data$t + data$X2001_FC + data$X2003_SARS)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -11002.6 -3320.3 310.3 3506.1 12557.4
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 35420.42 827.26 42.817 < 2e-16 ***
## data$t -72.55 5.55 -13.072 < 2e-16 ***
## data$X2001_FC -3371.05 1252.77 -2.691 0.00764 **
## data$X2003_SARS -5350.82 1833.69 -2.918 0.00386 **
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 23642030)
##
## Null deviance: 1.0304e+10 on 239 degrees of freedom
## Residual deviance: 5.5795e+09 on 236 degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 4761.9
##
## Number of Fisher Scoring iterations: 2

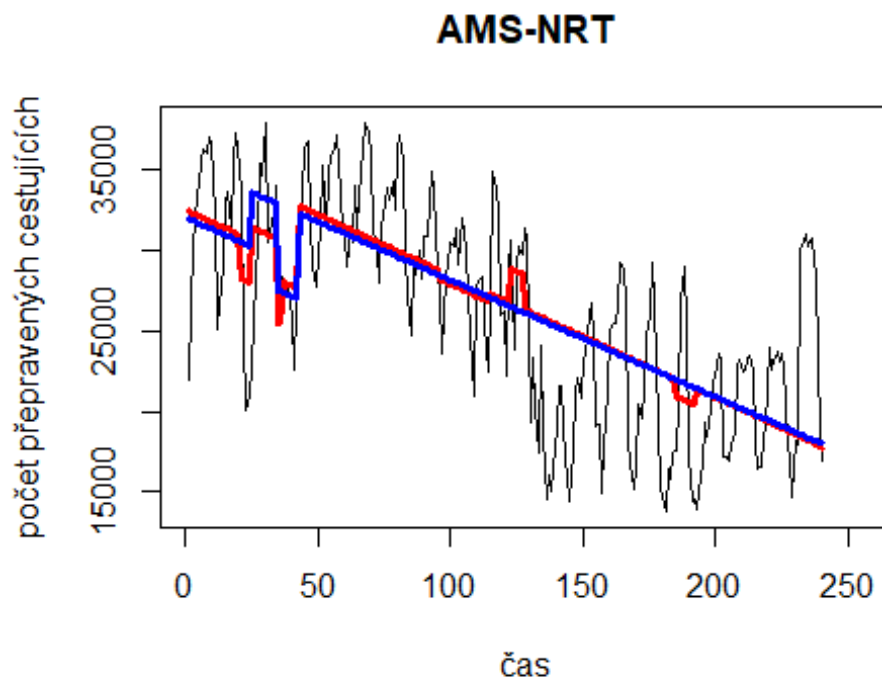
lm_AMS_NRT3 <- lm(data$AMS_NRT_30~data$t+data$X2001_FC+data$X2003_SARS)
summary(lm_AMS_NRT3)

##
## Call:
## lm(formula = data$AMS_NRT_30 ~ data$t + data$X2001_FC + data$X2003_SARS)
##
## Residuals:
## Min 1Q Median 3Q Max
## -11002.6 -3320.3 310.3 3506.1 12557.4
##
## Coefficients:

```

```
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept) 35420.42    827.26  42.817 < 2e-16 ***
## data$t      -72.55      5.55 -13.072 < 2e-16 ***
## data$X2001_FC -3371.05   1252.77  -2.691  0.00764 **
## data$X2003_SARS -5350.82   1833.69  -2.918  0.00386 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4862 on 236 degrees of freedom
## (16 observations deleted due to missingness)
## Multiple R-squared:  0.4585, Adjusted R-squared:  0.4516
## F-statistic: 66.61 on 3 and 236 DF,  p-value: < 2.2e-16

plot(data$AMS_NRT_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="AMS-NRT")
fit <- c(rep(0,0), lm_AMS_NRT1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_AMS_NRT2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

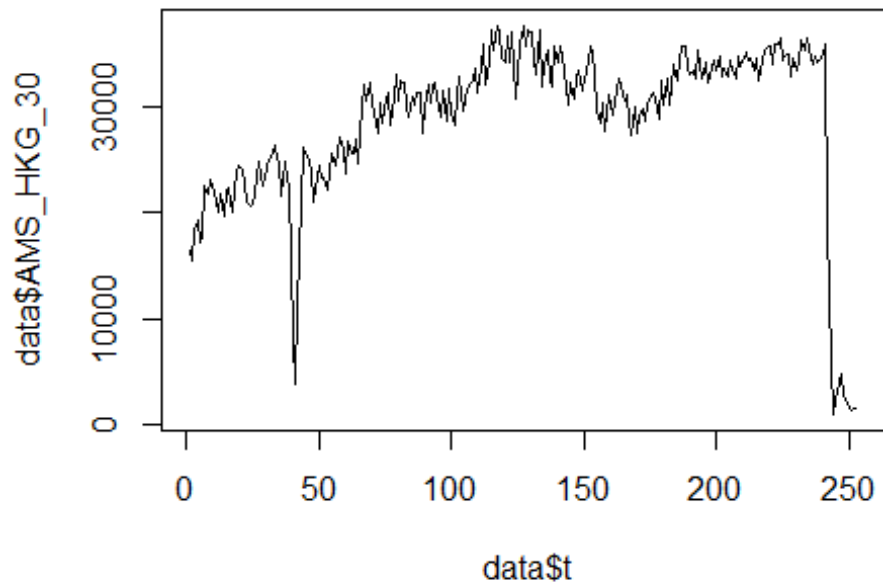


Spojeni 4. Evropa

- Čína + HKG letiště Amsterdam -> letiště Hongkong

```
data$AMS_HKG_30 <- data$AMS_HKG/data$days * 30
```

```
plot(data$AMS_HKG_30~data$t, t="l")
```



```
lm_AMS_HKG1 <- glm(data$AMS_HKG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_AMS_HKG1)
```

```
##
## Call:
## glm(formula = data$AMS_HKG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -13988.6  -1662.0   -53.1    1663.0   25335.2
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  24524.415    908.609   26.991 < 2e-16 ***
## data$t       47.221      5.712    8.267 9.44e-15 ***
## data$X2001_FC -4213.806   1168.178   -3.607 0.000377 ***
## data$X2001_TER -292.263   1210.776   -0.241 0.809463
## data$X2003_SARS -8729.619   1636.469   -5.334 2.21e-07 ***
## data$X2005_FLU  873.666   1356.801    0.644 0.520245
## data$X2008_FC  1092.288   1074.462    1.017 0.310372
## data$X2009_SF  4933.951   1251.366    3.943 0.000106 ***
## data$X2010_ER -442.943   2259.466   -0.196 0.844746
## data$X2012_MERS  544.823   1563.998    0.348 0.727881
```

```

## data$X2013_FLU    -1732.140    1394.898   -1.242  0.215534
## data$X2019_CV    -25334.597    1320.261  -19.189  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 18054511)
##
##      Null deviance: 1.4687e+10  on 251  degrees of freedom
## Residual deviance: 4.3331e+09  on 240  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 4939.5
##
## Number of Fisher Scoring iterations: 2

lm_AMS_HKG2 <- glm(data$AMS_HKG_30~data$t+data$X2001_FC+data$X2003_SARS+data$
X2009_SF+data$X2019_CV)
summary(lm_AMS_HKG2)

##
## Call:
## glm(formula = data$AMS_HKG_30 ~ data$t + data$X2001_FC + data$X2003_SARS +
##      data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -13911.3   -1688.2    -104.9    1706.7   25327.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    24815.91     738.19  33.617 < 2e-16 ***
## data$t          45.51        4.91   9.270 < 2e-16 ***
## data$X2001_FC  -4532.69    1100.46  -4.119 5.20e-05 ***
## data$X2003_SARS -9028.49    1600.33  -5.642 4.62e-08 ***
## data$X2009_SF   4966.04    1046.42   4.746 3.53e-06 ***
## data$X2019_CV -25207.22    1287.43 -19.579 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 17871866)
##
##      Null deviance: 1.4687e+10  on 251  degrees of freedom
## Residual deviance: 4.3965e+09  on 246  degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 4931.2
##
## Number of Fisher Scoring iterations: 2

lm_AMS_HKG3<- lm(data$AMS_HKG_30~data$t+data$X2001_FC+data$X2003_SARS+data$X2
009_SF+data$X2019_CV)
summary(lm_AMS_HKG3)

```

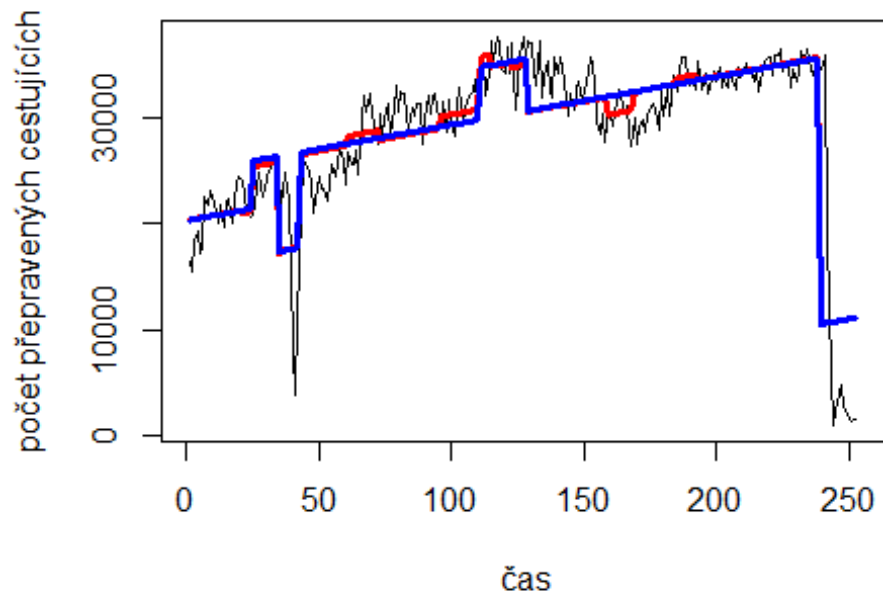
```

##
## Call:
## lm(formula = data$AMS_HKG_30 ~ data$t + data$X2001_FC + data$X2003_SARS +
##     data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -13911.3  -1688.2   -104.9   1706.7  25327.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   24815.91     738.19  33.617 < 2e-16 ***
## data$t         45.51         4.91   9.270 < 2e-16 ***
## data$X2001_FC -4532.69    1100.46  -4.119 5.20e-05 ***
## data$X2003_SARS -9028.49    1600.33  -5.642 4.62e-08 ***
## data$X2009_SF  4966.04     1046.42   4.746 3.53e-06 ***
## data$X2019_CV -25207.22    1287.43 -19.579 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4228 on 246 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared:  0.7007, Adjusted R-squared:  0.6946
## F-statistic: 115.2 on 5 and 246 DF,  p-value: < 2.2e-16

plot(data$AMS_HKG_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="AMS-HKG")
fit <- c(rep(0,0), lm_ams_hkg1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_ams_hkg2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

AMS-HKG

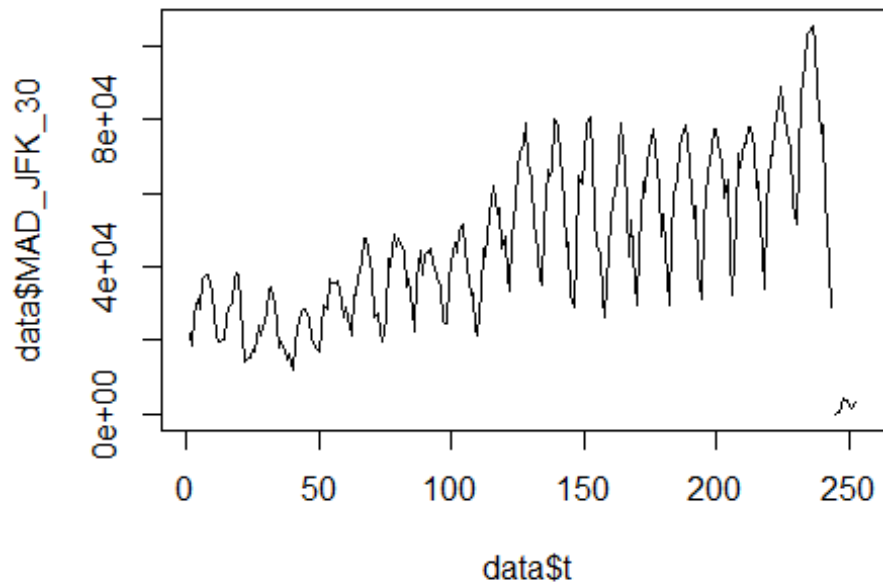


Spojeni 5. Evropa

- USA letiště Madrid -> letiště John F. Kennedy

```
data$MAD_JFK_30 <- data$MAD_JFK/data$days * 30
```

```
plot(data$MAD_JFK_30~data$t, t="l")
```

```
lm_MAD_JFK1 <- glm(data$MAD_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MAD_JFK1)
```

```
##
## Call:
## glm(formula = data$MAD_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -36367   -8044     568    8361   55962
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  18355.62   2740.06   6.699 1.46e-10 ***
## data$t       238.76     17.55  13.607 < 2e-16 ***
## data$X2001_FC  6314.18   3728.62   1.693  0.0917 .
## data$X2001_TER -3329.77   3954.99  -0.842  0.4007
## data$X2003_SARS -9159.54   5365.25  -1.707  0.0891 .
## data$X2008_FC -6561.49   3522.18  -1.863  0.0637 .
## data$X2009_SF  5515.92   4130.81   1.335  0.1830
## data$X2010_ER  9387.39   7495.20   1.252  0.2116
## data$X2019_CV -53175.54   4436.79 -11.985 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 198742651)
##
## Null deviance: 1.2100e+11 on 250 degrees of freedom
## Residual deviance: 4.8096e+10 on 242 degrees of freedom
## (5 observations deleted due to missingness)
## AIC: 5519.1
##
## Number of Fisher Scoring iterations: 2

lm_MAD_JFK2 <- glm(data$MAD_JFK_30~data$t+data$X2001_FC+data$X2009_SF+data$X2
019_CV)
summary(lm_MAD_JFK2)

##
## Call:
## glm(formula = data$MAD_JFK_30 ~ data$t + data$X2001_FC + data$X2009_SF +
## data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -36775 -8350 1062 8876 56060
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 14966.44 2324.04 6.440 6.23e-10 ***
## data$t 256.18 15.76 16.254 < 2e-16 ***
## data$X2001_FC 8930.71 3613.09 2.472 0.0141 *
## data$X2009_SF 7973.48 3510.92 2.271 0.0240 *
## data$X2019_CV -54063.83 4447.90 -12.155 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 202511913)
##
## Null deviance: 1.2100e+11 on 250 degrees of freedom
## Residual deviance: 4.9818e+10 on 246 degrees of freedom
## (5 observations deleted due to missingness)
## AIC: 5520
##
## Number of Fisher Scoring iterations: 2

lm_MAD_JFK3 <- lm(data$MAD_JFK_30~data$t+data$X2001_FC+data$X2009_SF+data$X20
19_CV)
summary(lm_MAD_JFK3)

##
## Call:
## lm(formula = data$MAD_JFK_30 ~ data$t + data$X2001_FC + data$X2009_SF +
## data$X2019_CV)
##

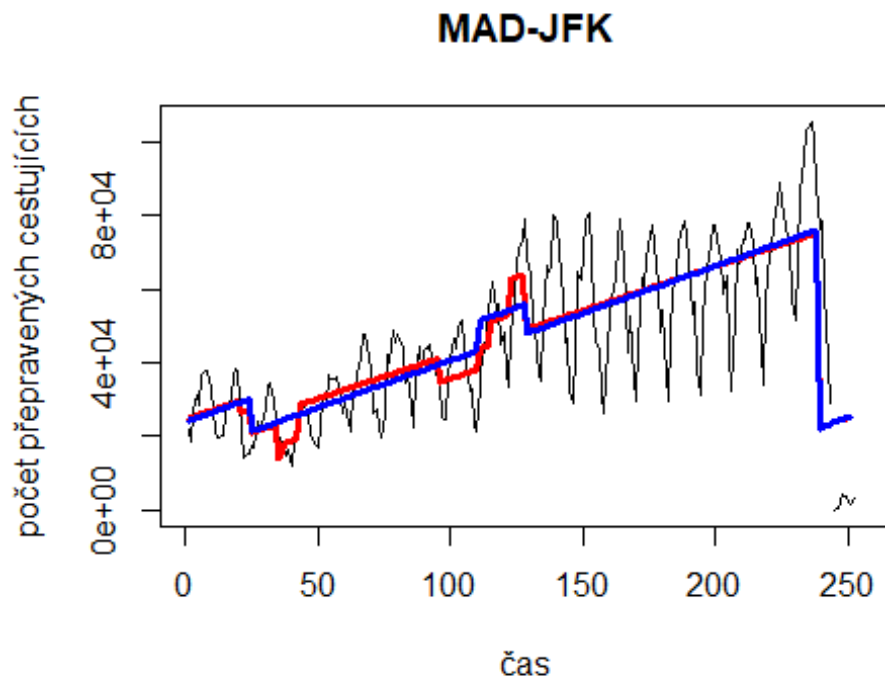
```

```

## Residuals:
##   Min     1Q Median     3Q      Max
## -36775 -8350  1062   8876  56060
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   14966.44   2324.04   6.440 6.23e-10 ***
## data$t         256.18     15.76  16.254 < 2e-16 ***
## data$X2001_FC  8930.71   3613.09   2.472  0.0141 *
## data$X2009_SF  7973.48   3510.92   2.271  0.0240 *
## data$X2019_CV -54063.83  4447.90 -12.155 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 14230 on 246 degrees of freedom
## (5 observations deleted due to missingness)
## Multiple R-squared:  0.5883, Adjusted R-squared:  0.5816
## F-statistic: 87.87 on 4 and 246 DF,  p-value: < 2.2e-16

plot(data$MAD_JFK_30, type="l",xlab="čas",ylab="počet přepravených cestujících h",main="MAD-JFK")
fit <- c(rep(0,0), lm_MAD_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_MAD_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

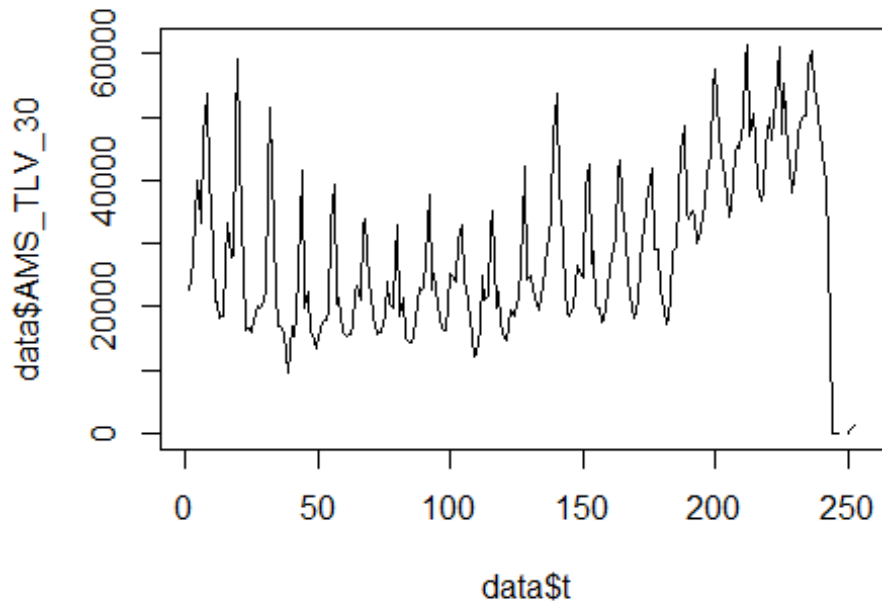


Amsterdam -> letiště Tel Aviv

Spojení letiště

```
data$AMS_TLV_30 <- data$AMS_TLV/data$days * 30
```

```
plot(data$AMS_TLV_30~data$t, t="l")
```



```
lm_AMS_TLV1 <- glm(data$AMS_TLV_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2010_ER+data$X2012_MERS+data$X2019_CV)  
summary(lm_AMS_TLV1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$AMS_TLV_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
## data$X2003_SARS + data$X2008_FC + data$X2010_ER + data$X2012_MERS +  
## data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##   Min      1Q  Median      3Q      Max  
## -20699  -5879  -1525   5057  31989
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)  11465.69   1953.42   5.870 1.44e-08 ***  
## data$t       138.52     12.75  10.866 < 2e-16 ***  
## data$X2001_FC 17550.42   2668.99   6.576 2.98e-10 ***  
## data$X2001_TER  4820.70   2835.35   1.700  0.0904 .  
## data$X2003_SARS -2629.14   3847.49  -0.683  0.4950  
## data$X2008_FC -4967.08   2491.74  -1.993  0.0473 *  
## data$X2010_ER -6215.40   4598.13  -1.352  0.1777
```

```

## data$X2012_MERS    -239.15    3714.27  -0.064    0.9487
## data$X2019_CV     -29356.02    3306.29  -8.879    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 102458276)
##
##      Null deviance: 4.3243e+10  on 249  degrees of freedom
## Residual deviance: 2.4692e+10  on 241  degrees of freedom
## (6 observations deleted due to missingness)
## AIC: 5331.5
##
## Number of Fisher Scoring iterations: 2

lm_AMS_TLV2 <- glm(data$AMS_TLV_30~data$t+data$X2001_FC+data$X2008_FC+data$X2
019_CV)
summary(lm_AMS_TLV2)

##
## Call:
## glm(formula = data$AMS_TLV_30 ~ data$t + data$X2001_FC + data$X2008_FC +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -19004   -6539   -1456    5324   35283
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   12087.91    1683.03   7.182 8.19e-12 ***
## data$t         134.03      11.32  11.838 < 2e-16 ***
## data$X2001_FC 17787.82    2591.12   6.865 5.43e-11 ***
## data$X2008_FC -5117.40    2461.03  -2.079  0.0386 *
## data$X2019_CV -28876.76    3269.46  -8.832 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 102982410)
##
##      Null deviance: 4.3243e+10  on 249  degrees of freedom
## Residual deviance: 2.5231e+10  on 245  degrees of freedom
## (6 observations deleted due to missingness)
## AIC: 5328.9
##
## Number of Fisher Scoring iterations: 2

lm_AMS_TLV3 <- lm(data$AMS_TLV_30~data$t+data$X2001_FC+data$X2008_FC+data$X20
19_CV)
summary(lm_AMS_TLV3)

```

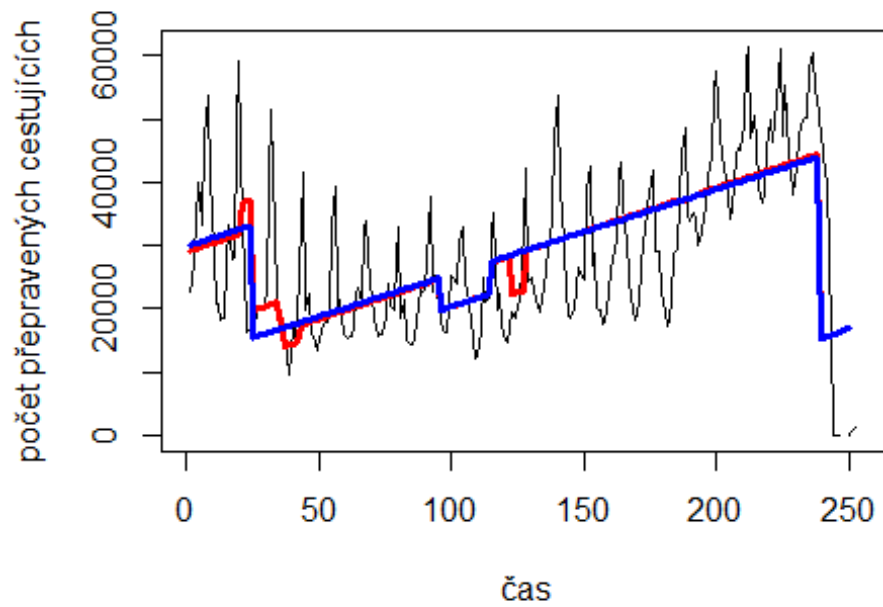
```

##
## Call:
## lm(formula = data$AMS_TLV_30 ~ data$t + data$X2001_FC + data$X2008_FC +
##     data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -19004  -6539  -1456   5324  35283
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  12087.91   1683.03   7.182 8.19e-12 ***
## data$t       134.03     11.32  11.838 < 2e-16 ***
## data$X2001_FC 17787.82   2591.12   6.865 5.43e-11 ***
## data$X2008_FC -5117.40   2461.03  -2.079  0.0386 *
## data$X2019_CV -28876.76   3269.46  -8.832 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 10150 on 245 degrees of freedom
## (6 observations deleted due to missingness)
## Multiple R-squared:  0.4165, Adjusted R-squared:  0.407
## F-statistic: 43.73 on 4 and 245 DF,  p-value: < 2.2e-16

plot(data$AMS_TLV_30, type="l" ,xlab="čas",ylab="počet přepravených cestujících",main="AMS-TLV")
fit <- c(rep(0,0), lm_AMS_TLV1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_AMS_TLV2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

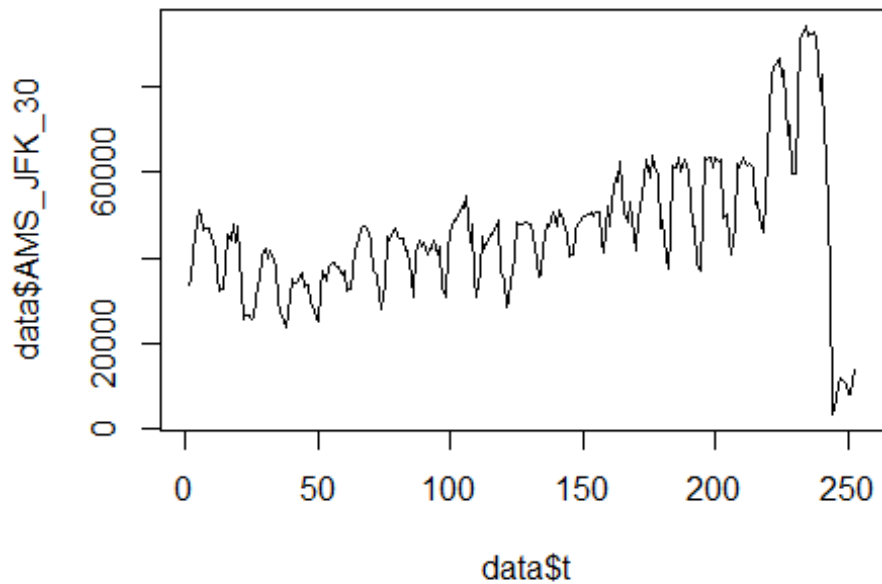
AMS-TLV



Spojení letiště Amsterdam -> letiště John F. Kennedy

```
data$AMS_JFK_30 <- data$AMS_JFK/data$days * 30
```

```
plot(data$AMS_JFK_30~data$t, t="l")
```



```
lm_AMS_JFK1 <- glm(data$AMS_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_AMS_JFK1)
```

```
##
## Call:
## glm(formula = data$AMS_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -25723  -5870    118    4878   54493
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   25548.87   2205.84  11.582 < 2e-16 ***
## data$t         176.80     14.13  12.516 < 2e-16 ***
## data$X2001_FC  12518.38   3001.66   4.170 4.23e-05 ***
## data$X2001_TER  -105.60   3183.90  -0.033  0.974
## data$X2003_SARS -2714.29   4319.20  -0.628  0.530
## data$X2008_FC   493.45   2835.47   0.174  0.862
## data$X2009_SF  -5337.17   3325.43  -1.605  0.110
## data$X2010_ER   1421.72   6033.88   0.236  0.814
## data$X2019_CV -39427.52   3470.60 -11.360 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



```

##
## (Dispersion parameter for gaussian family taken to be 128800550)
##
## Null deviance: 6.4049e+10 on 251 degrees of freedom
## Residual deviance: 3.1299e+10 on 243 degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5431.8
##
## Number of Fisher Scoring iterations: 2

lm_AMS_JFK2 <- glm(data$AMS_JFK_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_AMS_JFK2)

##
## Call:
## glm(formula = data$AMS_JFK_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -25718 -6169 370 4593 54514
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 24587.13 1817.22 13.530 < 2e-16 ***
## data$t 180.47 12.51 14.431 < 2e-16 ***
## data$X2001_FC 13416.66 2853.66 4.702 4.29e-06 ***
## data$X2019_CV -39366.49 3430.59 -11.475 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 127940083)
##
## Null deviance: 6.4049e+10 on 251 degrees of freedom
## Residual deviance: 3.1729e+10 on 248 degrees of freedom
## (4 observations deleted due to missingness)
## AIC: 5425.2
##
## Number of Fisher Scoring iterations: 2

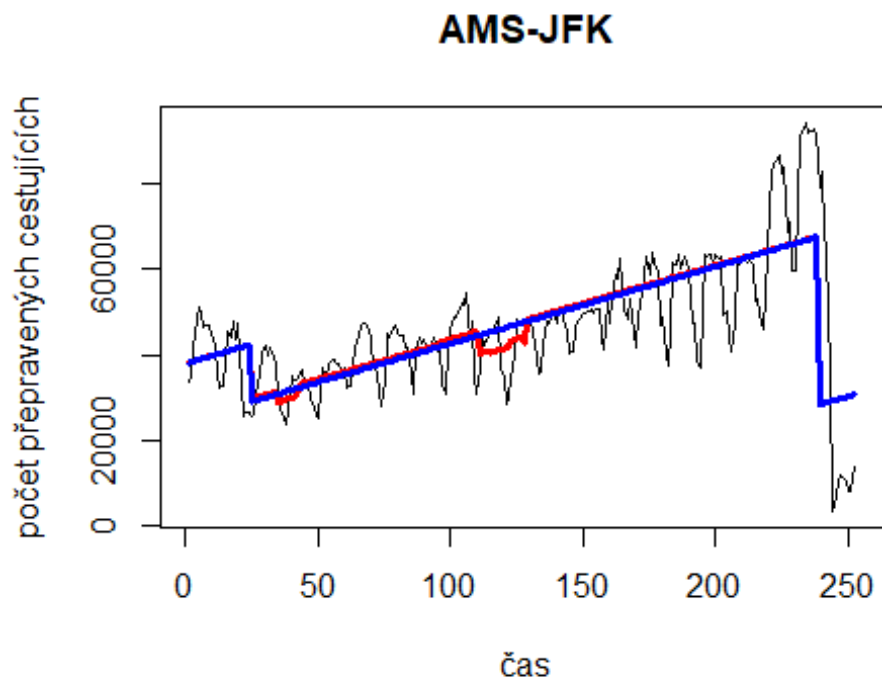
lm_AMS_JFK3 <- lm(data$AMS_JFK_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_AMS_JFK3)

##
## Call:
## lm(formula = data$AMS_JFK_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -25718 -6169 370 4593 54514
##
## Coefficients:

```

```
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  24587.13   1817.22  13.530 < 2e-16 ***
## data$t      180.47     12.51  14.431 < 2e-16 ***
## data$X2001_FC 13416.66   2853.66   4.702 4.29e-06 ***
## data$X2019_CV -39366.49   3430.59 -11.475 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11310 on 248 degrees of freedom
## (4 observations deleted due to missingness)
## Multiple R-squared:  0.5046, Adjusted R-squared:  0.4986
## F-statistic:  84.2 on 3 and 248 DF,  p-value: < 2.2e-16

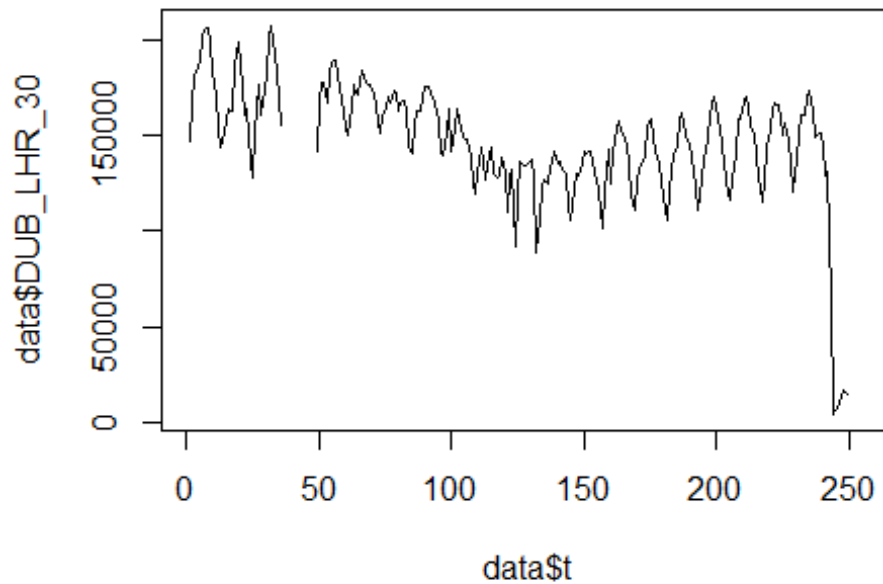
plot(data$AMS_JFK_30, type="l",xlab="čas",ylab="počet přepravených cestujících h",main="AMS-JFK")
fit <- c(rep(0,0), lm_AMS_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_AMS_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště Dublin -> letiště Londýn Heathrow

```
data$DUB_LHR_30 <- data$DUB_LHR/data$days * 30
```

```
plot(data$DUB_LHR_30~data$t, t="l")
```



```
lm_DUB_LHR1 <- glm(data$DUB_LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_DUB_LHR1)

##
## Call:
## glm(formula = data$DUB_LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -61841  -13698    1366   13882   88072
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  171620.41   4698.31  36.528 < 2e-16 ***
## data$t       -157.72     29.54  -5.340 2.24e-07 ***
## data$X2001_FC   4443.75   6071.67   0.732 0.46499
## data$X2001_TER  1095.43   6456.78   0.170 0.86543
## data$X2008_FC  -8147.48   5647.91  -1.443 0.15051
## data$X2009_SF -18270.30   6593.39  -2.771 0.00605 **
## data$X2010_ER -11541.41  11939.99  -0.967 0.33475
## data$X2019_CV -70977.48   7556.18  -9.393 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 504293526)
```

```

##
## Null deviance: 2.3698e+11 on 236 degrees of freedom
## Residual deviance: 1.1548e+11 on 229 degrees of freedom
## (19 observations deleted due to missingness)
## AIC: 5431.6
##
## Number of Fisher Scoring iterations: 2

lm_DUB_LHR2 <- glm(data$DUB_LHR_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_DUB_LHR2)

##
## Call:
## glm(formula = data$DUB_LHR_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -61765 -13791 1531 13464 88019
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 172941.02 3131.27 55.230 < 2e-16 ***
## data$t -168.30 21.92 -7.677 4.46e-13 ***
## data$X2009_SF -23343.24 5515.17 -4.233 3.32e-05 ***
## data$X2019_CV -69716.86 7425.91 -9.388 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 503743617)
##
## Null deviance: 2.3698e+11 on 236 degrees of freedom
## Residual deviance: 1.1737e+11 on 233 degrees of freedom
## (19 observations deleted due to missingness)
## AIC: 5427.4
##
## Number of Fisher Scoring iterations: 2

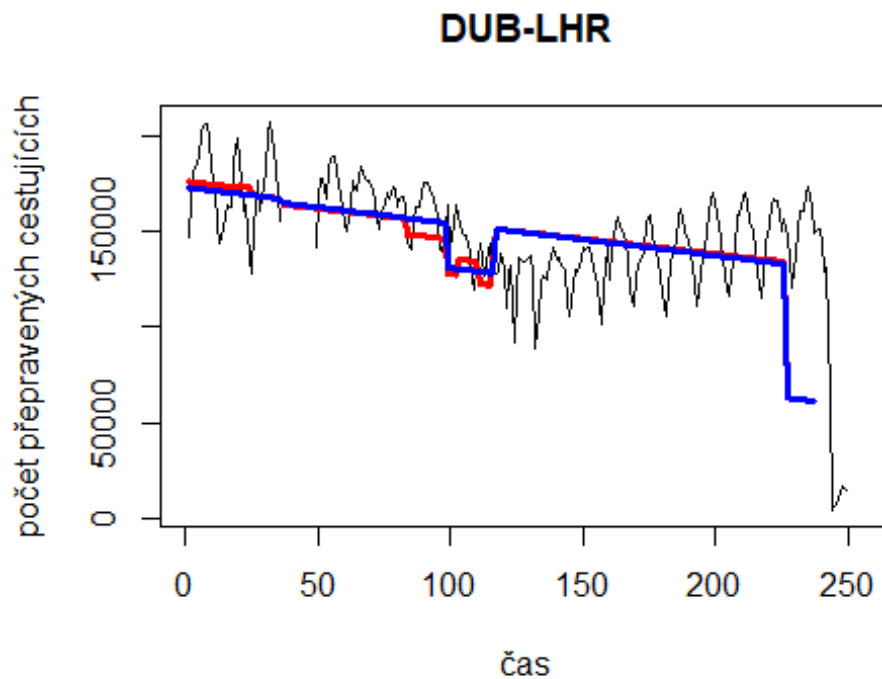
lm_DUB_LHR3 <- lm(data$DUB_LHR_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_DUB_LHR3)

##
## Call:
## lm(formula = data$DUB_LHR_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -61765 -13791 1531 13464 88019
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 172941.02 3131.27 55.230 < 2e-16 ***

```

```
## data$t          -168.30      21.92   -7.677 4.46e-13 ***
## data$X2009_SF -23343.24    5515.17  -4.233 3.32e-05 ***
## data$X2019_CV -69716.86    7425.91  -9.388 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 22440 on 233 degrees of freedom
## (19 observations deleted due to missingness)
## Multiple R-squared:  0.5047, Adjusted R-squared:  0.4983
## F-statistic: 79.14 on 3 and 233 DF,  p-value: < 2.2e-16

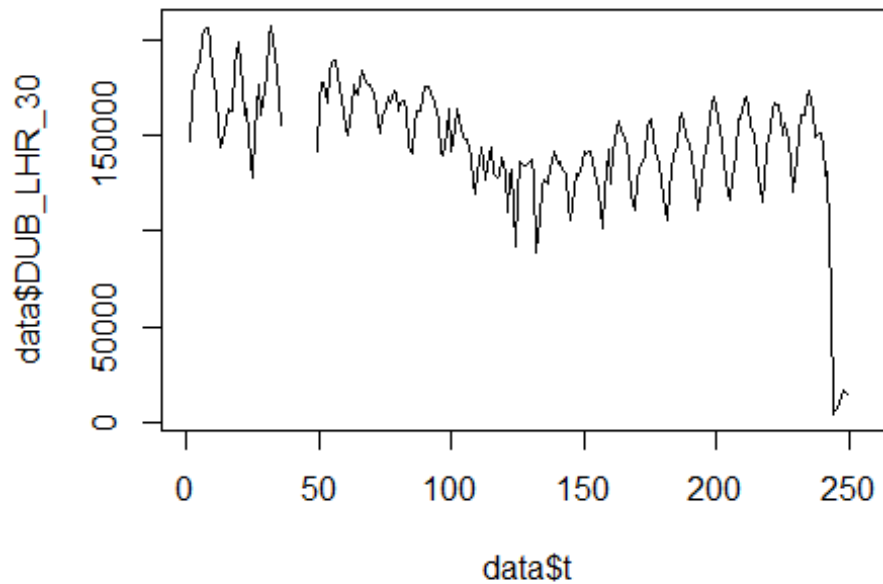
plot(data$DUB_LHR_30, type="l", xlab="čas", ylab="počet přepravených cestujících h", main="DUB-LHR")
fit <- c(rep(0,0), lm_DUB_LHR1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_DUB_LHR2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Dublin -> letiště Londýn Heathrow

```
data$DUB_LHR_30 <- data$DUB_LHR/data$days * 30
plot(data$DUB_LHR_30~data$t, t="l")
```



```
lm_DUB_LHR1 <- glm(data$DUB_LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012_MERS+data$X201
9_CV)
summary(lm_DUB_LHR1)
```

```
##
## Call:
## glm(formula = data$DUB_LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2012_MERS + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -61711  -13721   1351   13853   88059
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  171836.14   4730.61  36.324 < 2e-16 ***
## data$t       -160.34     30.05  -5.336 2.29e-07 ***
## data$X2001_FC    4147.62   6124.71  0.677 0.49897
## data$X2001_TER   1774.11   6805.30  0.261 0.79456
## data$X2003_SARS -5966.32  17114.79 -0.349 0.72771
## data$X2008_FC   -8104.91   5671.73 -1.429 0.15438
## data$X2009_SF  -18191.92   6621.41 -2.747 0.00649 **
## data$X2010_ER  -11508.38  11984.13 -0.960 0.33793
## data$X2012_MERS  3767.54   8275.42  0.455 0.64935
## data$X2019_CV -70554.62   7633.37 -9.243 < 2e-16 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 508001761)
##
##      Null deviance: 2.3698e+11  on 236  degrees of freedom
## Residual deviance: 1.1532e+11  on 227  degrees of freedom
## (19 observations deleted due to missingness)
## AIC: 5435.3
##
## Number of Fisher Scoring iterations: 2

lm_DUB_LHR2 <- glm(data$DUB_LHR_30~data$t+data$X2008_FC+data$X2019_CV)
summary(lm_DUB_LHR2)

##
## Call:
## glm(formula = data$DUB_LHR_30 ~ data$t + data$X2008_FC + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -60841  -15810    562   15007   88008
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  172304.57   3257.19  52.900 < 2e-16 ***
## data$t       -170.48     22.62  -7.536 1.07e-12 ***
## data$X2008_FC -11338.25   5552.91  -2.042  0.0423 *
## data$X2019_CV -68548.27   7631.21  -8.983 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 532938449)
##
##      Null deviance: 2.3698e+11  on 236  degrees of freedom
## Residual deviance: 1.2417e+11  on 233  degrees of freedom
## (19 observations deleted due to missingness)
## AIC: 5440.8
##
## Number of Fisher Scoring iterations: 2

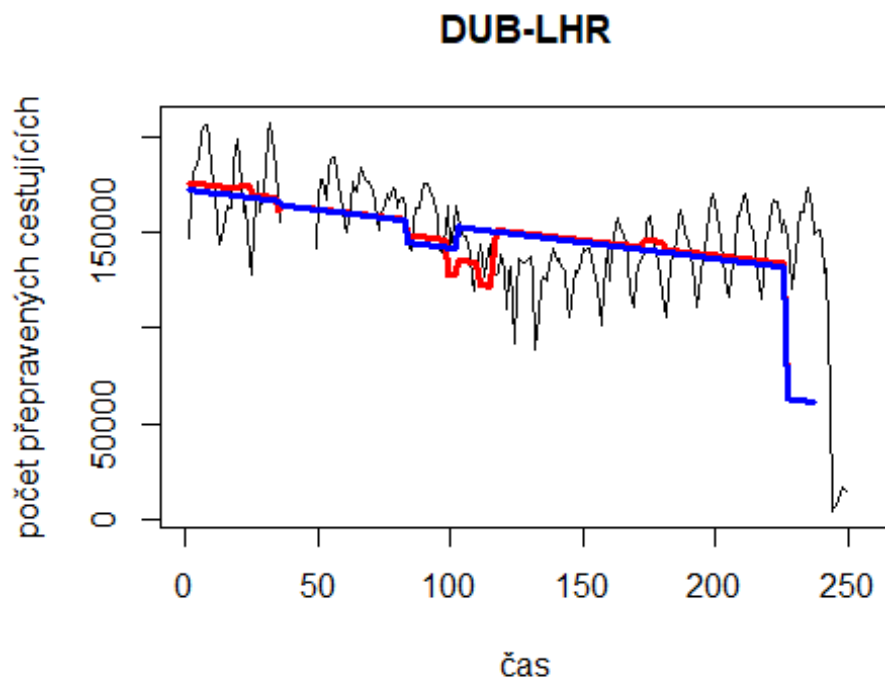
lm_DUB_LHR3 <- lm(data$DUB_LHR_30~data$t+data$X2008_FC+data$X2019_CV)
summary(lm_DUB_LHR3)

##
## Call:
## lm(formula = data$DUB_LHR_30 ~ data$t + data$X2008_FC + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -60841  -15810    562   15007   88008

```

```
##
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept) 172304.57   3257.19  52.900 < 2e-16 ***
## data$t      -170.48     22.62  -7.536 1.07e-12 ***
## data$X2008_FC -11338.25   5552.91  -2.042  0.0423 *
## data$X2019_CV -68548.27   7631.21  -8.983 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 23090 on 233 degrees of freedom
## (19 observations deleted due to missingness)
## Multiple R-squared:  0.476, Adjusted R-squared:  0.4693
## F-statistic: 70.55 on 3 and 233 DF,  p-value: < 2.2e-16

plot(data$DUB_LHR_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="DUB-LHR")
fit <- c(rep(0,0), lm_DUB_LHR1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_DUB_LHR2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

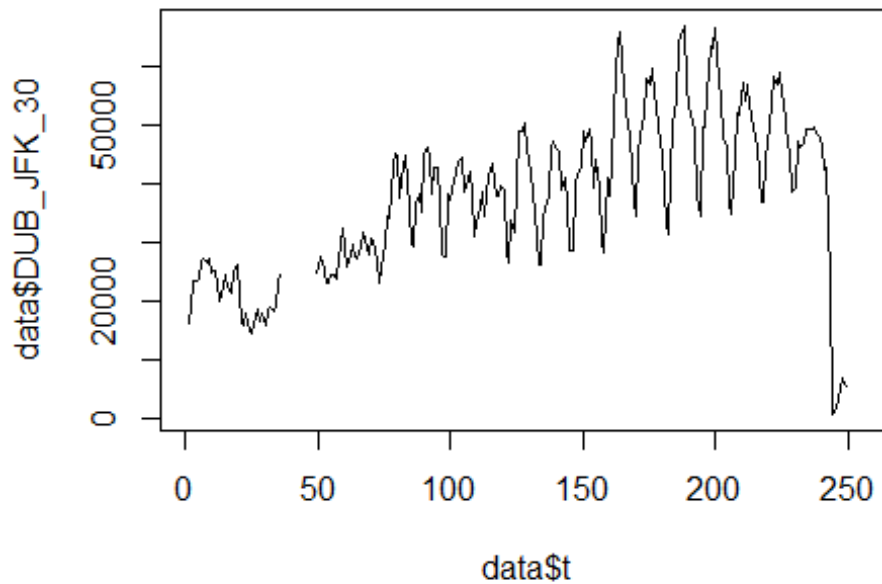


Spojení letiště

letiště Dublin -> letiště John F. Kennedy

```
data$DUB_JFK_30 <- data$DUB_JFK/data$days * 30
```

```
plot(data$DUB_JFK_30~data$t, t="l")
```

```
lm_DUB_JFK1 <- glm(data$DUB_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_DUB_JFK1)
```

```
##
## Call:
## glm(formula = data$DUB_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -19835.5  -4645.5    235.6   4251.5  28318.1
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   23280.39   1738.87  13.388 < 2e-16 ***
## data$t         129.72     10.93  11.870 < 2e-16 ***
## data$X2001_FC  -940.49   2254.09  -0.417  0.67690
## data$X2001_TER -9542.80   2505.80  -3.808  0.00018 ***
## data$X2003_SARS 5293.68   6302.49  0.840  0.40182
## data$X2008_FC   665.13   2087.74  0.319  0.75033
## data$X2009_SF  -537.56   2437.01  -0.221  0.82561
## data$X2010_ER  1494.75   4413.03  0.339  0.73514
## data$X2019_CV -34507.98   2792.94 -12.355 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 68888624)
##
## Null deviance: 4.2266e+10 on 236 degrees of freedom
## Residual deviance: 1.5707e+10 on 228 degrees of freedom
## (19 observations deleted due to missingness)
## AIC: 4960.8
##
## Number of Fisher Scoring iterations: 2

lm_DUB_JFK2 <- glm(data$DUB_JFK_30~data$t+data$X2001_TER+data$X2019_CV)
summary(lm_DUB_JFK2)

##
## Call:
## glm(formula = data$DUB_JFK_30 ~ data$t + data$X2001_TER + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -19835.5 -4697.5 -71.2 4269.8 28329.9
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 22932.796 1273.580 18.007 < 2e-16 ***
## data$t 132.073 8.712 15.159 < 2e-16 ***
## data$X2001_TER -8835.651 2313.654 -3.819 0.000172 ***
## data$X2019_CV -34734.259 2730.455 -12.721 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 67766438)
##
## Null deviance: 4.2266e+10 on 236 degrees of freedom
## Residual deviance: 1.5790e+10 on 233 degrees of freedom
## (19 observations deleted due to missingness)
## AIC: 4952
##
## Number of Fisher Scoring iterations: 2

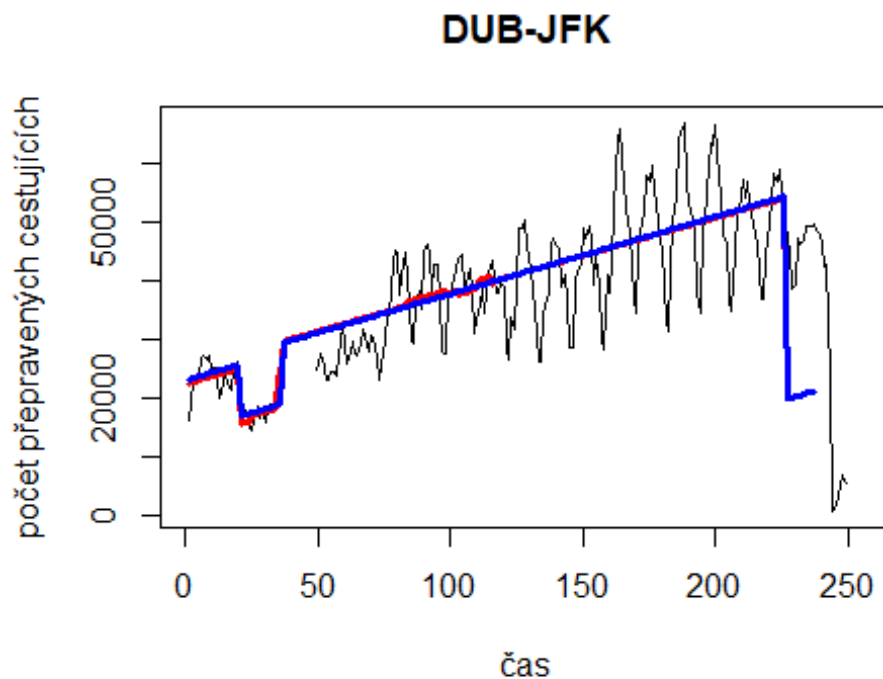
lm_DUB_JFK3 <- lm(data$DUB_JFK_30~data$t+data$X2001_TER+data$X2019_CV)
summary(lm_DUB_JFK3)

##
## Call:
## lm(formula = data$DUB_JFK_30 ~ data$t + data$X2001_TER + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -19835.5 -4697.5 -71.2 4269.8 28329.9
##
## Coefficients:

```

```
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  22932.796  1273.580  18.007 < 2e-16 ***
## data$t      132.073     8.712  15.159 < 2e-16 ***
## data$X2001_TER -8835.651  2313.654  -3.819 0.000172 ***
## data$X2019_CV -34734.259  2730.455 -12.721 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 8232 on 233 degrees of freedom
## (19 observations deleted due to missingness)
## Multiple R-squared:  0.6264, Adjusted R-squared:  0.6216
## F-statistic: 130.2 on 3 and 233 DF,  p-value: < 2.2e-16

plot(data$DUB_JFK_30, type="l",xlab="čas",ylab="počet přepravených cestujících
h",main="DUB-JFK")
fit <- c(rep(0,0), lm_DUB_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_DUB_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

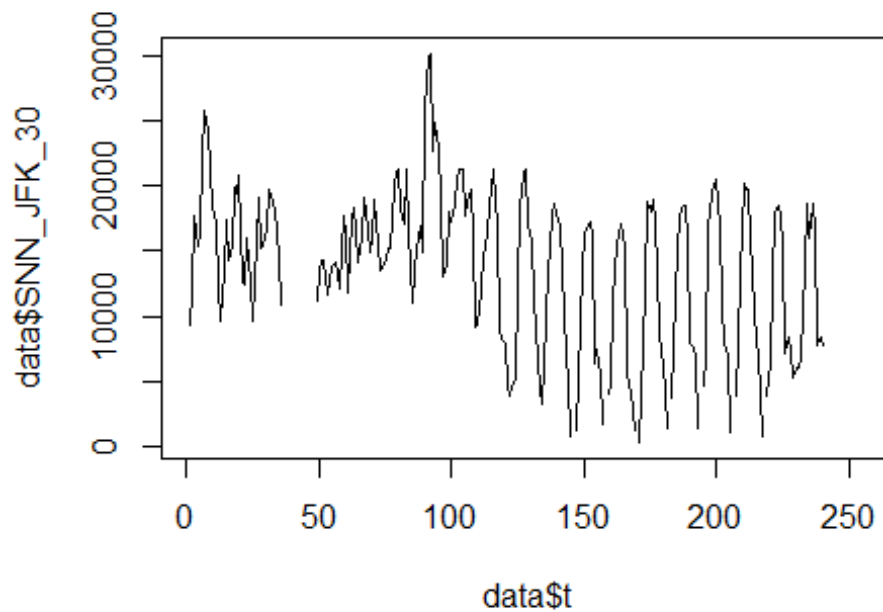


Spojení letiště

Shannon -> letiště John F. Kennedy

```
data$SNN_JFK_30 <- data$SNN_JFK/data$days * 30
```

```
plot(data$SNN_JFK_30~data$t, t="l")
```



```
lm_SNN_JFK1 <- glm(data$SNN_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_SNN_JFK1)
```

```
##
## Call:
## glm(formula = data$SNN_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -12183.5  -3820.2   115.2   3935.2  15158.7
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  18437.831  1170.313  15.755 < 2e-16 ***
## data$t       -37.347    7.411  -5.040 9.98e-07 ***
## data$X2001_FC -1199.438  1513.578  -0.792  0.429
## data$X2001_TER -1623.484  1681.084  -0.966  0.335
## data$X2003_SARS -2770.781  4226.069  -0.656  0.513
## data$X2008_FC  2309.844  1400.793   1.649  0.101
## data$X2009_SF -1430.548  1634.992  -0.875  0.383
## data$X2010_ER  -36.008  2959.156  -0.012  0.990
## data$X2019_CV -1405.245  4020.890  -0.349  0.727
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 30973431)
##
## Null deviance: 7879884362 on 220 degrees of freedom
## Residual deviance: 6566367416 on 212 degrees of freedom
## (35 observations deleted due to missingness)
## AIC: 4449.9
##
## Number of Fisher Scoring iterations: 2

lm_SNN_JFK2 <- glm(data$SNN_JFK_30~data$t)
summary(lm_SNN_JFK2)

##
## Call:
## glm(formula = data$SNN_JFK_30 ~ data$t)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -12087 -4136 56 4160 15512
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 17637.450 765.070 23.053 < 2e-16 ***
## data$t -32.492 5.435 -5.978 9.06e-09 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 30933033)
##
## Null deviance: 7879884362 on 220 degrees of freedom
## Residual deviance: 6774334172 on 219 degrees of freedom
## (35 observations deleted due to missingness)
## AIC: 4442.8
##
## Number of Fisher Scoring iterations: 2

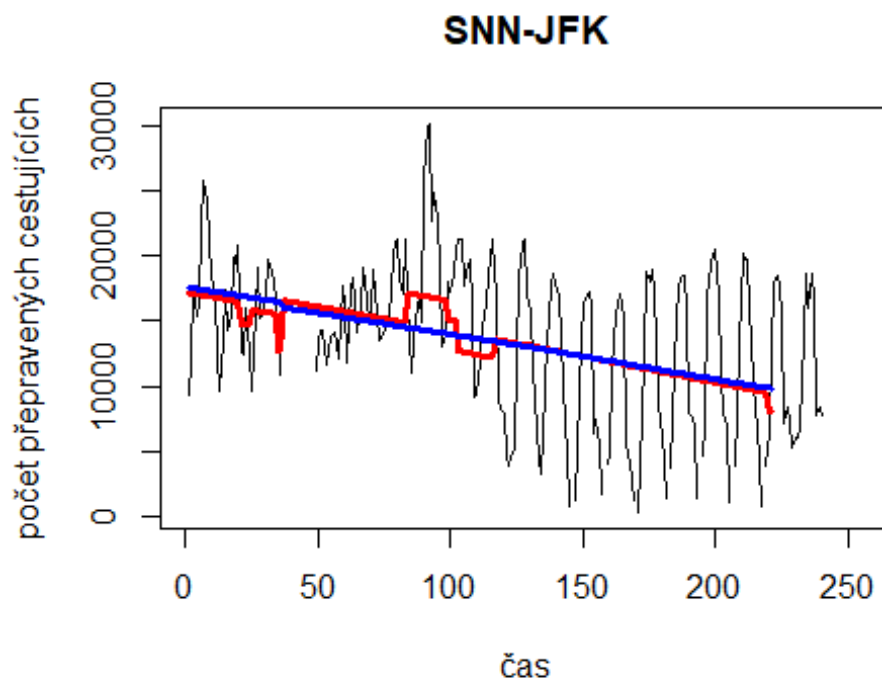
lm_SNN_JFK3 <- lm(data$SNN_JFK_30~data$t)
summary(lm_SNN_JFK3)

##
## Call:
## lm(formula = data$SNN_JFK_30 ~ data$t)
##
## Residuals:
## Min 1Q Median 3Q Max
## -12087 -4136 56 4160 15512
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 17637.450 765.070 23.053 < 2e-16 ***

```

```
## data$t          -32.492      5.435  -5.978 9.06e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 5562 on 219 degrees of freedom
## (35 observations deleted due to missingness)
## Multiple R-squared:  0.1403, Adjusted R-squared:  0.1364
## F-statistic: 35.74 on 1 and 219 DF,  p-value: 9.065e-09

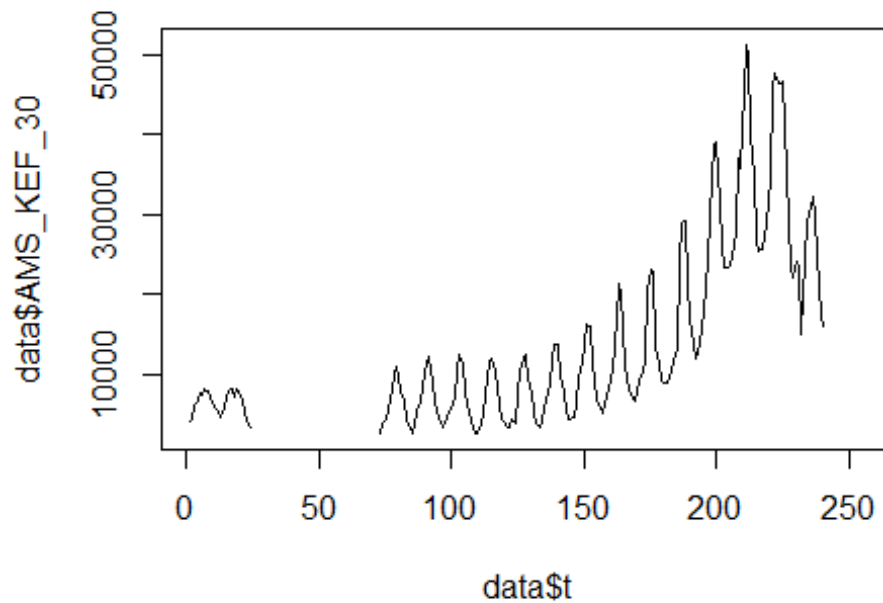
plot(data$SNN_JFK_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="SNN-JFK")
fit <- c(rep(0,0), lm_SNN_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_SNN_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Amsterdam -> letiště Keflavik

```
data$AMS_KEF_30 <- data$AMS_KEF/data$days * 30
plot(data$AMS_KEF_30~data$t, t="l")
```



```
lm_AMS_KEF1 <- glm(data$AMS_KEF_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_AMS_KEF1)
```

```
##
## Call:
## glm(formula = data$AMS_KEF_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -14939.3  -4819.2   -397.9   3182.3  25160.7
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -14540.37   2229.53  -6.522 6.51e-10 ***
## data$t       192.24     12.96  14.838 < 2e-16 ***
## data$X2001_FC 19219.95   2645.13   7.266 1.02e-11 ***
## data$X2001_TER -4033.48   3945.30  -1.022 0.30796
## data$X2003_SARS      NA         NA      NA      NA
## data$X2008_FC   910.29   1916.35   0.475 0.63534
## data$X2009_SF -1102.46   2153.21  -0.512 0.60926
## data$X2010_ER  -694.23   3828.96  -0.181 0.85632
## data$X2019_CV -14773.37   5216.17  -2.832 0.00514 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 51804039)
##
## Null deviance: 2.5349e+10 on 191 degrees of freedom
## Residual deviance: 9.5319e+09 on 184 degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3965.2
##
## Number of Fisher Scoring iterations: 2

lm_AMS_KEF2 <- glm(data$AMS_KEF_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_AMS_KEF2)

##
## Call:
## glm(formula = data$AMS_KEF_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -14860.1 -5325.5 -125.6 2954.1 25228.1
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) -14489.39 1883.22 -7.694 7.81e-13 ***
## data$t 191.68 11.57 16.564 < 2e-16 ***
## data$X2001_FC 18503.74 2276.00 8.130 5.64e-14 ***
## data$X2019_CV -14689.98 5181.99 -2.835 0.00509 **
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 51199420)
##
## Null deviance: 2.5349e+10 on 191 degrees of freedom
## Residual deviance: 9.6255e+09 on 188 degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3959.1
##
## Number of Fisher Scoring iterations: 2

lm_AMS_KEF3 <- lm(data$AMS_KEF_30~data$t+data$X2001_FC+data$X2019_CV)
summary(lm_AMS_KEF3)

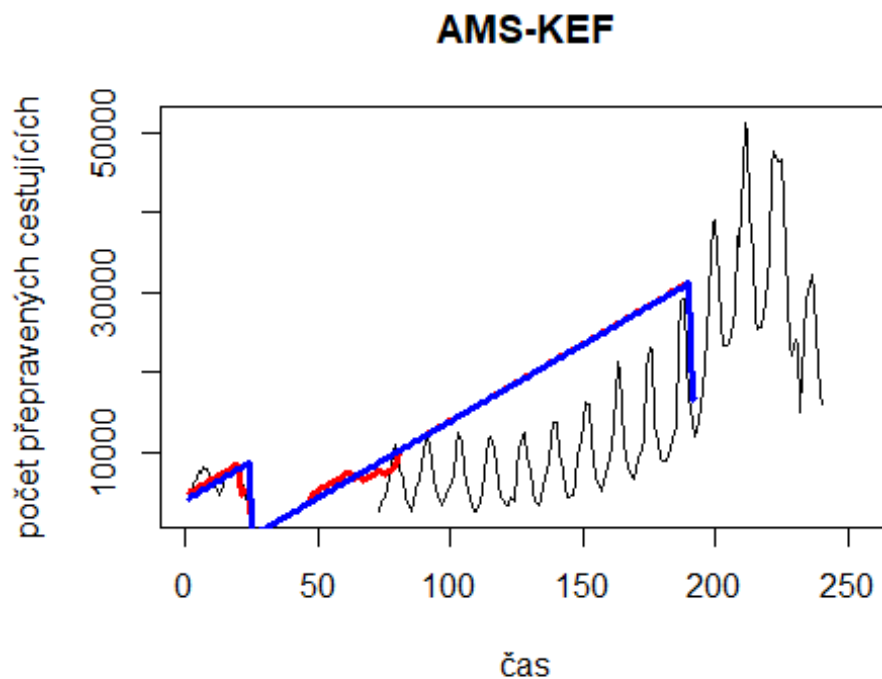
##
## Call:
## lm(formula = data$AMS_KEF_30 ~ data$t + data$X2001_FC + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -14860.1 -5325.5 -125.6 2954.1 25228.1
##
## Coefficients:

```



```
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept) -14489.39   1883.22  -7.694 7.81e-13 ***
## data$t      191.68     11.57  16.564 < 2e-16 ***
## data$X2001_FC 18503.74   2276.00   8.130 5.64e-14 ***
## data$X2019_CV -14689.98   5181.99  -2.835 0.00509 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7155 on 188 degrees of freedom
## (64 observations deleted due to missingness)
## Multiple R-squared:  0.6203, Adjusted R-squared:  0.6142
## F-statistic: 102.4 on 3 and 188 DF,  p-value: < 2.2e-16

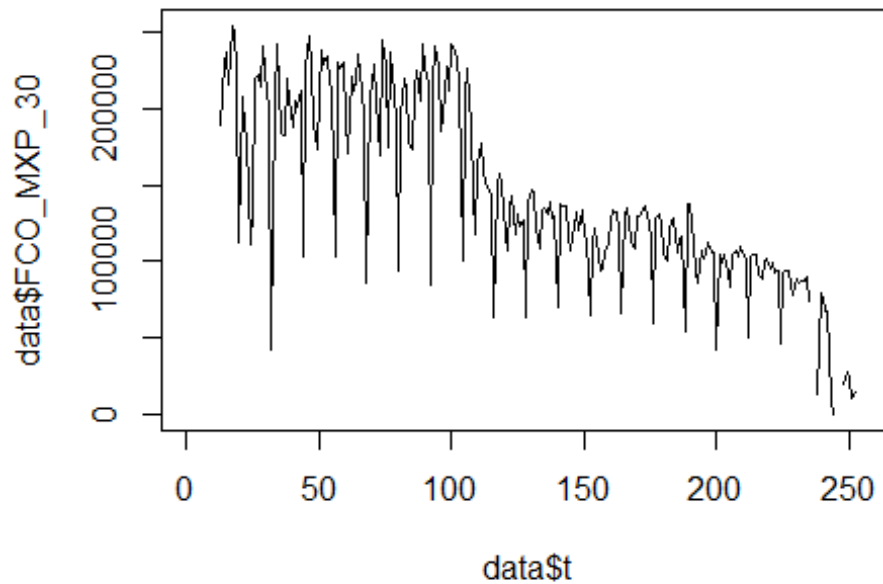
plot(data$AMS_KEF_30, type="l",xlab="čas",ylab="počet přepravených cestujících
h",main="AMS-KEF")
fit <- c(rep(0,0), lm_AMS_KEF1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_AMS_KEF2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



8. Spojení letiště Řím Fiumicino Airport -> Milan Malpensa Airport

```
data$FCO_MXP_30 <- data$FCO_MXP/data$days * 30
```

```
plot(data$FCO_MXP_30~data$t, t="l")
```



```
lm_FCO_MXP1 <- glm(data$FCO_MXP_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_FCO_MXP1)

##
## Call:
## glm(formula = data$FCO_MXP_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -148803  -12261    6246   17622   64314
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  245499.30    6101.96  40.233 < 2e-16 ***
## data$t       -739.25     39.92 -18.519 < 2e-16 ***
## data$X2001_FC -21353.25   10682.44  -1.999 0.046811 *
## data$X2001_TER -30142.62    9466.57  -3.184 0.001656 **
## data$X2008_FC  25299.56    8148.06   3.105 0.002145 **
## data$X2009_SF -33724.20    9582.48  -3.519 0.000523 ***
## data$X2010_ER   9263.25   17405.69   0.532 0.595110
## data$X2019_CV -27567.16   11025.83  -2.500 0.013118 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1071843420)
```

```

##
## Null deviance: 8.3601e+11 on 234 degrees of freedom
## Residual deviance: 2.4331e+11 on 227 degrees of freedom
## (21 observations deleted due to missingness)
## AIC: 5563
##
## Number of Fisher Scoring iterations: 2

lm_FCO_MXP2 <- glm(data$FCO_MXP_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_FCO_MXP2)

##
## Call:
## glm(formula = data$FCO_MXP_30 ~ data$t + data$X2001_FC + data$X2001_TER +
## data$X2008_FC + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -148814 -12304 7054 17775 64259
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 245563.79 6091.16 40.315 < 2e-16 ***
## data$t -739.36 39.86 -18.551 < 2e-16 ***
## data$X2001_FC -21399.11 10665.29 -2.006 0.045992 *
## data$X2001_TER -30192.61 9451.21 -3.195 0.001598 **
## data$X2008_FC 24686.77 8053.61 3.065 0.002437 **
## data$X2009_SF -31066.66 8165.67 -3.805 0.000183 ***
## data$X2019_CV -27605.50 11008.25 -2.508 0.012848 *
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1068473851)
##
## Null deviance: 8.3601e+11 on 234 degrees of freedom
## Residual deviance: 2.4361e+11 on 228 degrees of freedom
## (21 observations deleted due to missingness)
## AIC: 5561.3
##
## Number of Fisher Scoring iterations: 2

lm_FCO_MXP3 <- lm(data$FCO_MXP_30~data$t+data$X2001_FC+data$X2001_TER+data$X2
008_FC+data$X2009_SF+data$X2019_CV)

summary(lm_FCO_MXP3)

##
## Call:
## lm(formula = data$FCO_MXP_30 ~ data$t + data$X2001_FC + data$X2001_TER +
## data$X2008_FC + data$X2009_SF + data$X2019_CV)

```

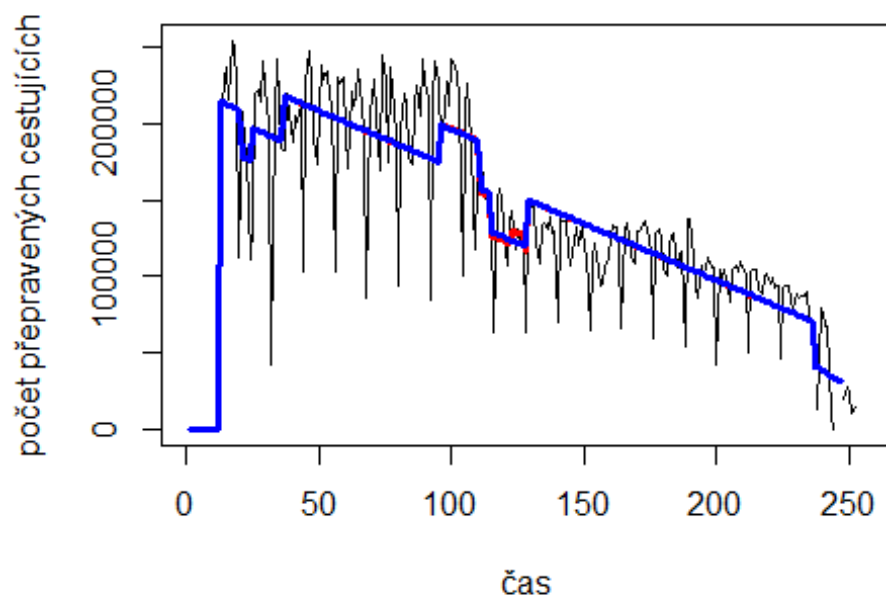
```

##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -148814  -12304    7054   17775   64259
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  245563.79    6091.16  40.315 < 2e-16 ***
## data$t       -739.36      39.86  -18.551 < 2e-16 ***
## data$X2001_FC -21399.11   10665.29  -2.006 0.045992 *
## data$X2001_TER -30192.61    9451.21  -3.195 0.001598 **
## data$X2008_FC  24686.77    8053.61   3.065 0.002437 **
## data$X2009_SF -31066.66    8165.67  -3.805 0.000183 ***
## data$X2019_CV -27605.50   11008.25  -2.508 0.012848 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 32690 on 228 degrees of freedom
## (21 observations deleted due to missingness)
## Multiple R-squared:  0.7086, Adjusted R-squared:  0.7009
## F-statistic: 92.41 on 6 and 228 DF,  p-value: < 2.2e-16

plot(data$FCO_MXP_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="FCO-MXP")
fit <- c(rep(0,12), lm_FCO_MXP1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_FCO_MXP2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

FCO-MXP

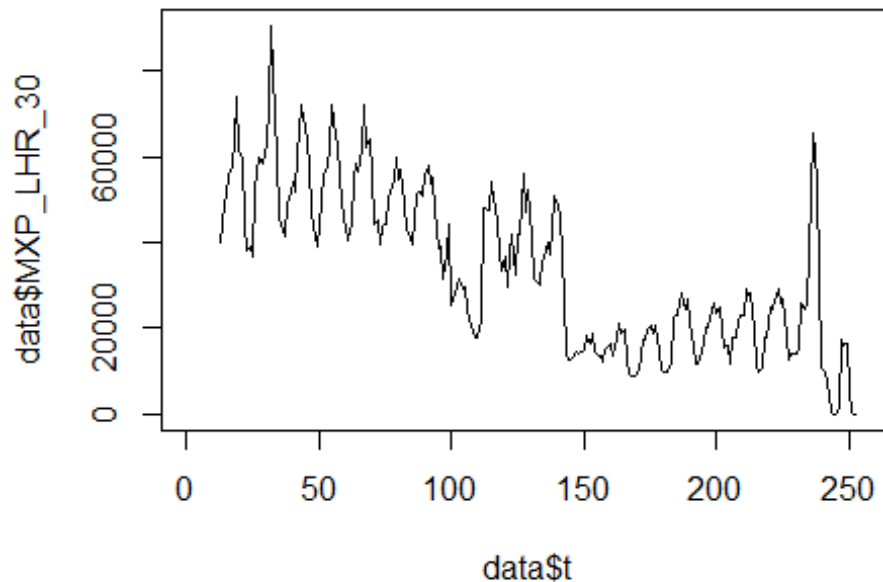


Spojení letiště

Milano -> letiště Londýn Heathrow

```
data$MXP_LHR_30 <- data$MXP_LHR/data$days * 30
```

```
plot(data$MXP_LHR_30~data$t, t="l")
```



```
lm_MXP_LHR1 <- glm(data$MXP_LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MXP_LHR1)
```

```
##
## Call:
## glm(formula = data$MXP_LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -22706   -7240    -187    6936   53656
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   65088.04   2268.22  28.696 < 2e-16 ***
## data$t        -225.04    14.51 -15.507 < 2e-16 ***
## data$X2001_FC -8083.81   3839.21  -2.106  0.0363 *
## data$X2001_TER    10.93   3347.87  0.003  0.9974
## data$X2003_SARS -6787.16   4407.44  -1.540  0.1249
## data$X2008_FC -11625.46   2894.82  -4.016 8.01e-05 ***
## data$X2009_SF   6188.36   3393.76  1.823  0.0695 .
## data$X2010_ER   -354.38   6157.09  -0.058  0.9542
## data$X2019_CV  -2944.73   3543.97  -0.831  0.4069
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 134113622)
##
## Null deviance: 8.5613e+10 on 239 degrees of freedom
## Residual deviance: 3.0980e+10 on 231 degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 5183.3
##
## Number of Fisher Scoring iterations: 2

lm_MXP_LHR2 <- glm(data$MXP_LHR_30~data$t+data$X2001_FC+data$X2008_FC+data$X2
009_SF)
summary(lm_MXP_LHR2)

##
## Call:
## glm(formula = data$MXP_LHR_30 ~ data$t + data$X2001_FC + data$X2008_FC +
## data$X2009_SF)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -22040 -8144 -414 6973 54005
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 64396.2 1872.5 34.391 < 2e-16 ***
## data$t -223.6 11.8 -18.952 < 2e-16 ***
## data$X2001_FC -7415.2 3736.6 -1.984 0.048365 *
## data$X2008_FC -11152.5 2830.4 -3.940 0.000107 ***
## data$X2009_SF 6502.9 2876.9 2.260 0.024716 *
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 133710280)
##
## Null deviance: 8.5613e+10 on 239 degrees of freedom
## Residual deviance: 3.1422e+10 on 235 degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 5178.7
##
## Number of Fisher Scoring iterations: 2

lm_MXP_LHR3 <- lm(data$MXP_LHR_30~data$t+data$X2001_FC+data$X2008_FC+data$X2
09_SF)
summary(lm_MXP_LHR3)

##
## Call:
## lm(formula = data$MXP_LHR_30 ~ data$t + data$X2001_FC + data$X2008_FC +
## data$X2009_SF)
##

```

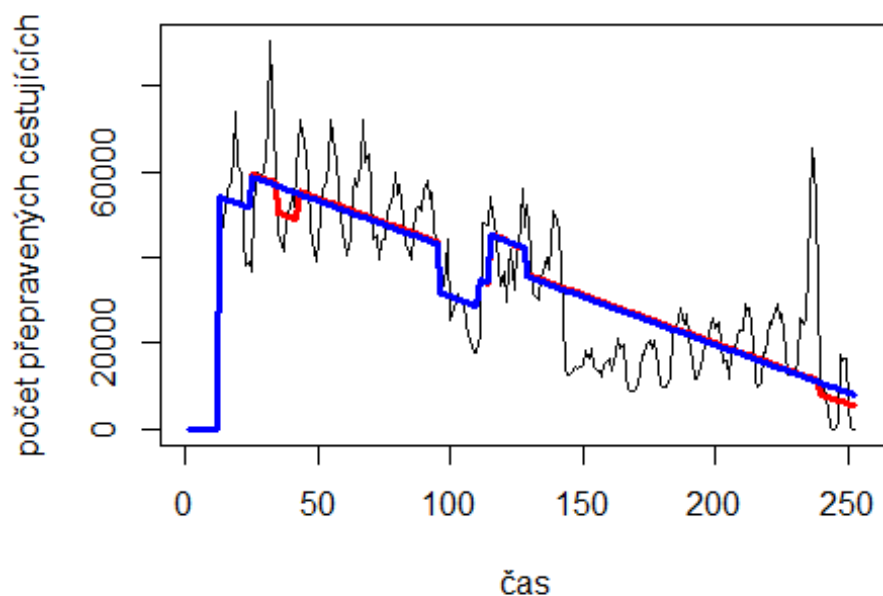
```

## Residuals:
##   Min     1Q Median     3Q      Max
## -22040 -8144  -414   6973  54005
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   64396.2    1872.5   34.391 < 2e-16 ***
## data$t        -223.6       11.8  -18.952 < 2e-16 ***
## data$X2001_FC -7415.2     3736.6  -1.984 0.048365 *
## data$X2008_FC -11152.5    2830.4  -3.940 0.000107 ***
## data$X2009_SF  6502.9     2876.9   2.260 0.024716 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11560 on 235 degrees of freedom
## (16 observations deleted due to missingness)
## Multiple R-squared:  0.633, Adjusted R-squared:  0.6267
## F-statistic: 101.3 on 4 and 235 DF,  p-value: < 2.2e-16

plot(data$MXP_LHR_30, type="l",xlab="čas",ylab="počet přepravených cestujících h",main="MXP-LHR")
fit <- c(rep(0,12), lm_MXP_LHR1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_MXP_LHR2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

MXP-LHR

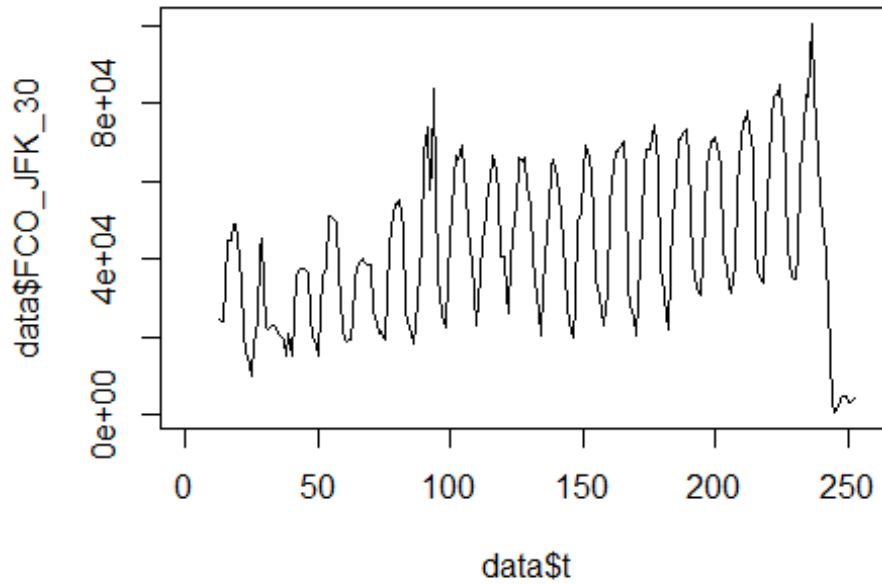


Řím Fiumicino -> letiště John F. Kennedy

Spojení letiště


```
data$FCO_JFK_30 <- data$FCO_JFK/data$days * 30
```

```
plot(data$FCO_JFK_30~data$t, t="l")
```



```
lm_FCO_JFK1 <- glm(data$FCO_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_FCO_JFK1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$FCO_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
## -31783 -14542   1054   14243  43618
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    25648.8    3219.4   7.967 7.40e-14 ***
## data$t         153.0       20.6   7.426 2.14e-12 ***
## data$X2001_FC   7164.5    5449.3   1.315  0.190
## data$X2001_TER -7269.7    4751.9  -1.530  0.127
## data$X2003_SARS -8030.0    6255.8  -1.284  0.201
## data$X2008_FC  2710.8    4108.8   0.660  0.510
## data$X2009_SF  4614.1    4817.0   0.958  0.339
```

```

## data$X2010_ER      5612.5      8739.2    0.642    0.521
## data$X2019_CV     -46070.4      5030.2   -9.159   < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 270187770)
##
##      Null deviance: 9.9954e+10  on 239  degrees of freedom
## Residual deviance: 6.2413e+10  on 231  degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 5351.4
##
## Number of Fisher Scoring iterations: 2

lm_FCO_JFK2 <- glm(data$FCO_JFK_30~data$t+data$X2019_CV)
summary(lm_FCO_JFK2)

##
## Call:
## glm(formula = data$FCO_JFK_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -32443  -14952    691   15319   43517
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  25153.68   2391.59  10.518  <2e-16 ***
## data$t       159.31     16.91    9.422  <2e-16 ***
## data$X2019_CV -47132.74   4998.04  -9.430  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 275053843)
##
##      Null deviance: 9.9954e+10  on 239  degrees of freedom
## Residual deviance: 6.5188e+10  on 237  degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 5349.9
##
## Number of Fisher Scoring iterations: 2

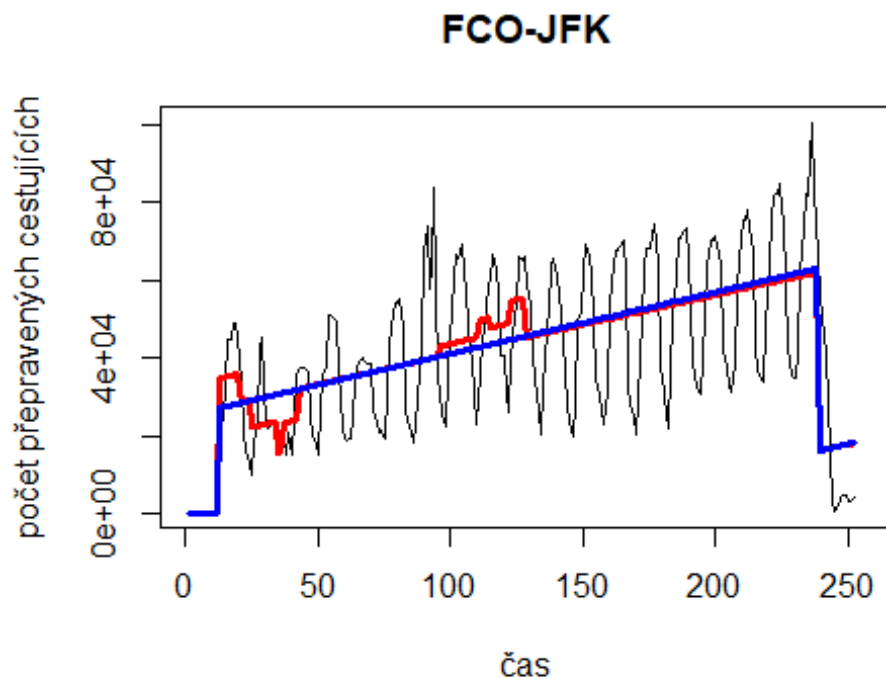
lm_FCO_JFK3 <- lm(data$FCO_JFK_30~data$t+data$X2019_CV)
summary(lm_FCO_JFK3)

##
## Call:
## lm(formula = data$FCO_JFK_30 ~ data$t + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

```
## -32443 -14952 691 15319 43517
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 25153.68 2391.59 10.518 <2e-16 ***
## data$t 159.31 16.91 9.422 <2e-16 ***
## data$X2019_CV -47132.74 4998.04 -9.430 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 16580 on 237 degrees of freedom
## (16 observations deleted due to missingness)
## Multiple R-squared: 0.3478, Adjusted R-squared: 0.3423
## F-statistic: 63.2 on 2 and 237 DF, p-value: < 2.2e-16

plot(data$FCO_JFK_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="FCO-JFK")
fit <- c(rep(0,12), lm_FCO_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_FCO_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

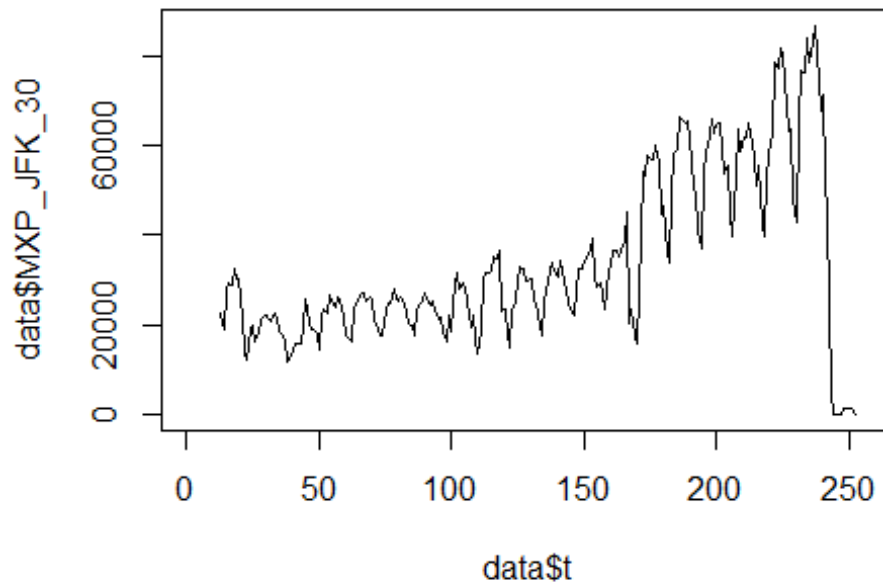


Spojení letiště

Milano MAlpena -> letiště John F. Kennedy

```
data$MXP_JFK_30 <- data$MXP_JFK/data$days * 30
```

```
plot(data$MXP_JFK_30~data$t, t="l")
```



```
lm_MXP_JFK1 <- glm(data$MXP_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MXP_JFK1)
```

```
##
## Call:
## glm(formula = data$MXP_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -30210   -6590       207    6355   55346
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2935.90    2287.43   1.283 0.200605
## data$t         252.96     14.63  17.285 < 2e-16 ***
## data$X2001_FC  14563.76    3871.73   3.762 0.000214 ***
## data$X2001_TER   5292.00    3376.23   1.567 0.118383
## data$X2003_SARS  1349.89    4444.77   0.304 0.761627
## data$X2008_FC  -4955.05    2919.34  -1.697 0.090984 .
## data$X2009_SF  -3464.86    3422.51  -1.012 0.312419
## data$X2010_ER  -2385.05    6209.24  -0.384 0.701249
## data$X2019_CV -47425.36    3573.98 -13.270 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 136395125)
##
## Null deviance: 8.8735e+10 on 239 degrees of freedom
## Residual deviance: 3.1507e+10 on 231 degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 5187.4
##
## Number of Fisher Scoring iterations: 2

lm_MXP_JFK2 <- glm(data$MXP_JFK_30~data$t+data$X2001_FC+data$X2008_FC+data$X2
019_CV)
summary(lm_MXP_JFK2)

##
## Call:
## glm(formula = data$MXP_JFK_30 ~ data$t + data$X2001_FC + data$X2008_FC +
## data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -29972 -7064 -63 6239 55299
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 4161.81 1942.87 2.142 0.0332 *
## data$t 244.35 13.07 18.693 < 2e-16 ***
## data$X2001_FC 15261.18 3796.09 4.020 7.83e-05 ***
## data$X2008_FC -6006.09 2839.57 -2.115 0.0355 *
## data$X2019_CV -46536.90 3552.00 -13.102 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 137096726)
##
## Null deviance: 8.8735e+10 on 239 degrees of freedom
## Residual deviance: 3.2218e+10 on 235 degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 5184.7
##
## Number of Fisher Scoring iterations: 2

lm_MXP_JFK3 <- lm(data$MXP_JFK_30~data$t+data$X2001_FC+data$X2008_FC+data$X20
19_CV)
summary(lm_MXP_JFK3)

##
## Call:
## lm(formula = data$MXP_JFK_30 ~ data$t + data$X2001_FC + data$X2008_FC +
## data$X2019_CV)
##

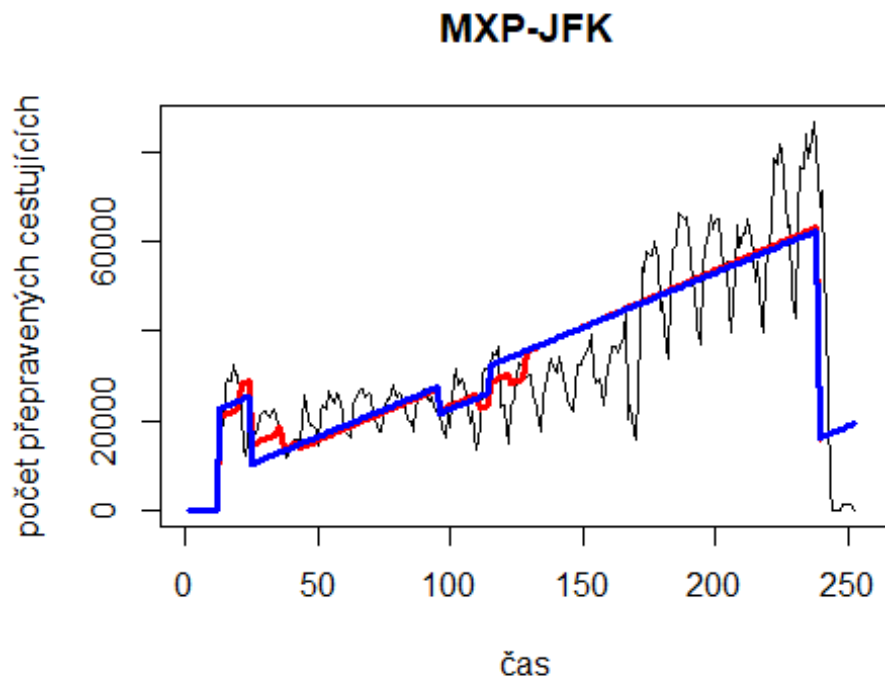
```

```

## Residuals:
##   Min     1Q  Median     3Q      Max
## -29972 -7064    -63   6239  55299
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4161.81   1942.87   2.142  0.0332 *
## data$t         244.35    13.07  18.693 < 2e-16 ***
## data$X2001_FC 15261.18   3796.09   4.020 7.83e-05 ***
## data$X2008_FC -6006.09   2839.57  -2.115  0.0355 *
## data$X2019_CV -46536.90   3552.00 -13.102 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11710 on 235 degrees of freedom
## (16 observations deleted due to missingness)
## Multiple R-squared:  0.6369, Adjusted R-squared:  0.6307
## F-statistic: 103.1 on 4 and 235 DF,  p-value: < 2.2e-16

plot(data$MXP_JFK_30, type="l",xlab="čas",ylab="počet přepravených cestujících
h",main="MXP-JFK")
fit <- c(rep(0,12), lm_MXP_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_MXP_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)

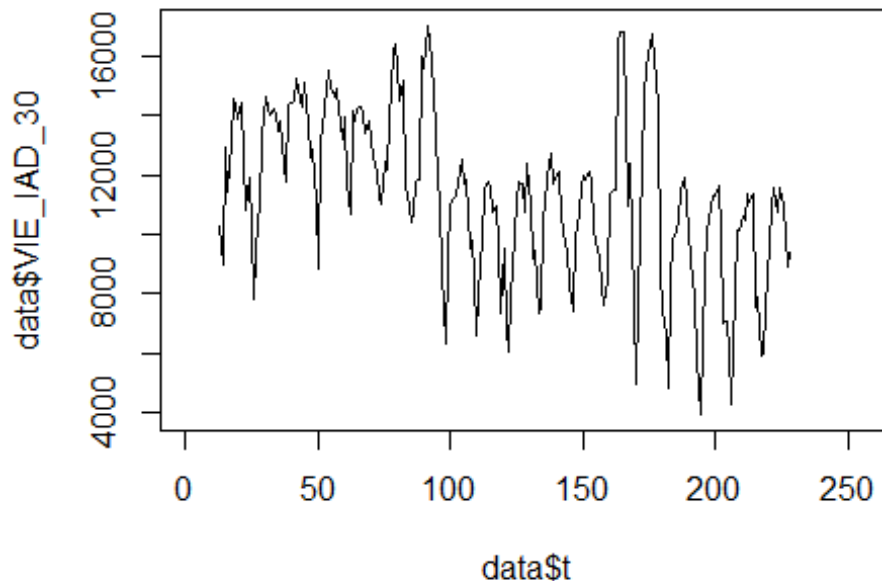
```



Spojení letiště Vídeň -> letiště Washington Dulles

```
data$VIE_IAD_30 <- data$VIE_IAD/data$days * 30
```

```
plot(data$VIE_IAD_30~data$t, t="l")
```



```
lm_VIE_IAD1 <- glm(data$VIE_IAD_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_VIE_IAD1)
```

```
##
## Call:
## glm(formula = data$VIE_IAD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -5954  -1593    397   1305   6394
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  14923.507   476.067  31.348 < 2e-16 ***
## data$t       -25.916     3.172  -8.170 2.96e-14 ***
## data$X2001_FC -1601.917   784.217  -2.043  0.04234 *
## data$X2001_TER -1226.666   683.026  -1.796  0.07396 .
## data$X2003_SARS  115.015   897.824   0.128  0.89819
## data$X2008_FC -1680.514   588.420  -2.856  0.00473 **
```

```

## data$X2009_SF      -1707.960    690.078  -2.475  0.01412 *
## data$X2010_ER       496.787   1251.552   0.397  0.69182
## data$X2019_CV         NA         NA         NA         NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 5541118)
##
## Null deviance: 1644899324 on 215 degrees of freedom
## Residual deviance: 1152552467 on 208 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3976.8
##
## Number of Fisher Scoring iterations: 2

lm_VIE_IAD2 <- glm(data$VIE_IAD_30~data$t+data$X2001_FC+data$X2008_FC+data$X2
009_SF)
summary(lm_VIE_IAD2)

##
## Call:
## glm(formula = data$VIE_IAD_30 ~ data$t + data$X2001_FC + data$X2008_FC +
## data$X2009_SF)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -6141.5  -1566.0   359.6   1344.3   6380.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  14597.194   405.589  35.990 < 2e-16 ***
## data$t       -23.983     2.821  -8.502 3.42e-15 ***
## data$X2001_FC -1720.255   769.331  -2.236  0.02640 *
## data$X2008_FC -1602.646   576.824  -2.778  0.00596 **
## data$X2009_SF -1491.954   587.378  -2.540  0.01180 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 5551683)
##
## Null deviance: 1644899324 on 215 degrees of freedom
## Residual deviance: 1171405063 on 211 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3974.3
##
## Number of Fisher Scoring iterations: 2

lm_VIE_IAD2 <- lm(data$VIE_IAD_30~data$t+data$X2001_FC+data$X2008_FC+data$X2
09_SF)
summary(lm_VIE_IAD2)

```



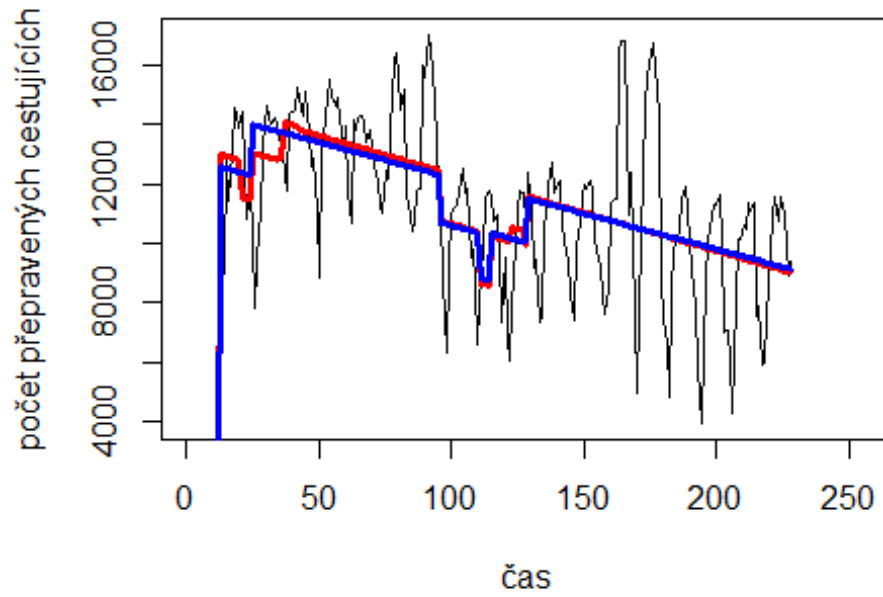
```

##
## Call:
## lm(formula = data$VIE_IAD_30 ~ data$t + data$X2001_FC + data$X2008_FC +
##     data$X2009_SF)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -6141.5 -1566.0   359.6  1344.3  6380.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  14597.194    405.589   35.990 < 2e-16 ***
## data$t        -23.983      2.821   -8.502 3.42e-15 ***
## data$X2001_FC -1720.255    769.331   -2.236 0.02640 *
## data$X2008_FC -1602.646    576.824   -2.778 0.00596 **
## data$X2009_SF -1491.954    587.378   -2.540 0.01180 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2356 on 211 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.2879, Adjusted R-squared:  0.2744
## F-statistic: 21.32 on 4 and 211 DF,  p-value: 8.758e-15

plot(data$VIE_IAD_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="VIE-IAD")
fit <- c(rep(0,12), lm_VIE_IAD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_VIE_IAD2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

VIE-IAD

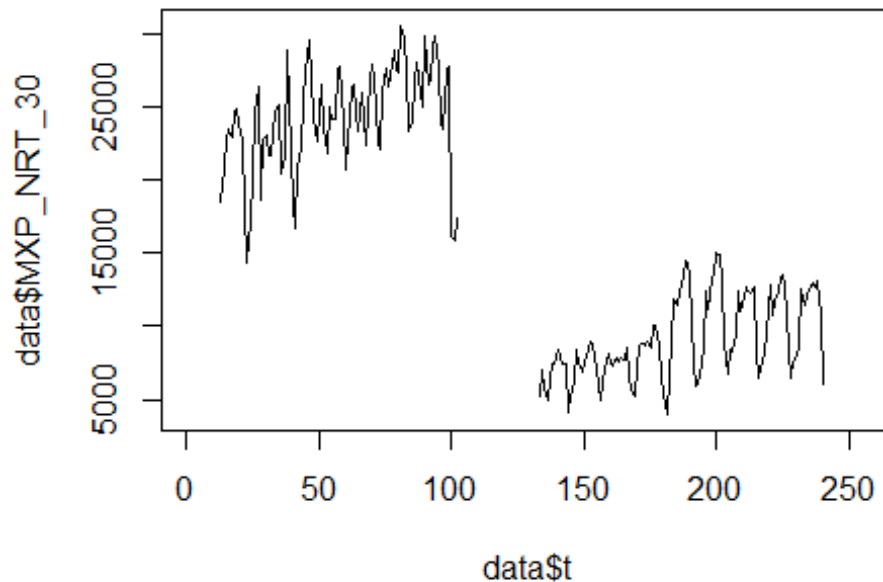


Spojení letiště

Milano Malpensa -> letiště Narita

```
data$MXP_NRT_30 <- data$MXP_NRT/data$days * 30
```

```
plot(data$MXP_NRT_30~data$t, t="l")
```



```
lm_MXP_NRT1 <- glm(data$MXP_NRT_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_MXP_NRT1)
```

```
##
## Call:
## glm(formula = data$MXP_NRT_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -11039.1  -3078.5   328.3   3571.1   9648.9
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  29630.090   1057.276  28.025 < 2e-16 ***
## data$t       -100.669     6.577 -15.306 < 2e-16 ***
## data$X2001_FC -5454.982   1636.044  -3.334 0.001030 **
## data$X2001_TER -3406.365   1424.965  -2.390 0.017813 *
## data$X2003_SARS -2739.174   1864.887  -1.469 0.143554
## data$X2005_FLU  2090.918   1550.949   1.348 0.179231
## data$X2008_FC  2025.516   1900.687   1.066 0.287937
## data$X2009_SF          NA          NA      NA      NA
## data$X2010_ER          NA          NA      NA      NA
## data$X2012_MERS   835.215   1779.598   0.469 0.639379
```

```

## data$X2013_FLU -5688.485 1588.024 -3.582 0.000434 ***
## data$X2019_CV 2861.278 3494.621 0.819 0.413956
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 23338345)
##
## Null deviance: 1.3116e+10 on 197 degrees of freedom
## Residual deviance: 4.3876e+09 on 188 degrees of freedom
## (58 observations deleted due to missingness)
## AIC: 3932.8
##
## Number of Fisher Scoring iterations: 2

lm_MXP_NRT2 <- glm(data$MXP_NRT_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2013_FLU)
summary(lm_MXP_NRT2)

##
## Call:
## glm(formula = data$MXP_NRT_30 ~ data$t + data$X2001_FC + data$X2001_TER +
## data$X2013_FLU)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -11244.1 -3256.6 280.6 3657.6 9457.6
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 29790.97 883.67 33.713 < 2e-16 ***
## data$t -100.34 5.74 -17.481 < 2e-16 ***
## data$X2001_FC -5450.66 1577.94 -3.454 0.000678 ***
## data$X2001_TER -3919.96 1397.82 -2.804 0.005558 **
## data$X2013_FLU -5902.39 1585.58 -3.723 0.000259 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 23531569)
##
## Null deviance: 1.3116e+10 on 197 degrees of freedom
## Residual deviance: 4.5416e+09 on 193 degrees of freedom
## (58 observations deleted due to missingness)
## AIC: 3929.7
##
## Number of Fisher Scoring iterations: 2

lm_MXP_NRT3 <- lm(data$MXP_NRT_30~data$t+data$X2001_FC+data$X2001_TER+data$X2
013_FLU)
summary(lm_MXP_NRT3)

```

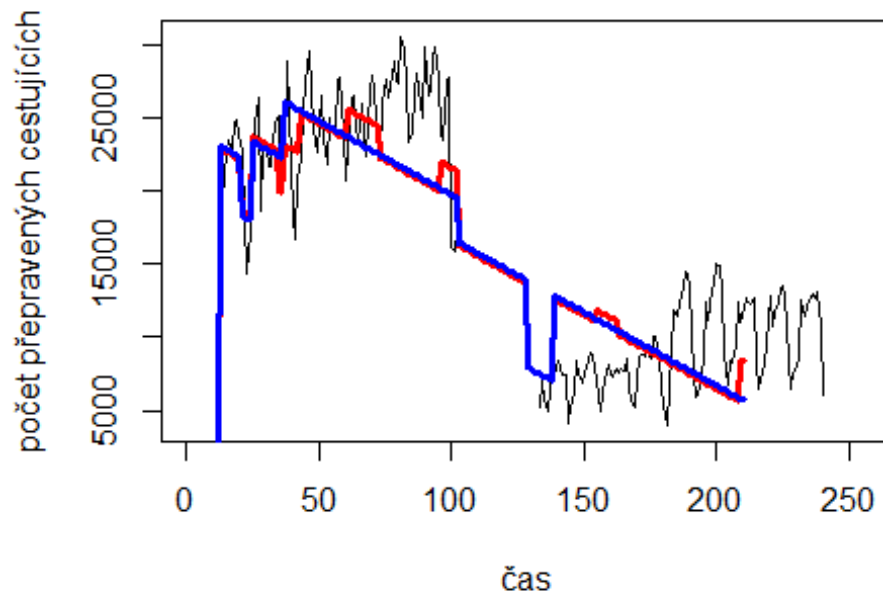
```

##
## Call:
## lm(formula = data$MXP_NRT_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2013_FLU)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -11244.1  -3256.6   280.6   3657.6   9457.6
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  29790.97    883.67  33.713 < 2e-16 ***
## data$t       -100.34     5.74  -17.481 < 2e-16 ***
## data$X2001_FC -5450.66   1577.94  -3.454 0.000678 ***
## data$X2001_TER -3919.96   1397.82  -2.804 0.005558 **
## data$X2013_FLU -5902.39   1585.58  -3.723 0.000259 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4851 on 193 degrees of freedom
## (58 observations deleted due to missingness)
## Multiple R-squared:  0.6537, Adjusted R-squared:  0.6466
## F-statistic: 91.1 on 4 and 193 DF,  p-value: < 2.2e-16

plot(data$MXP_NRT_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="MXP-NRT")
fit <- c(rep(0,12), lm_MXP_NRT1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_MXP_NRT2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

MXP-NRT

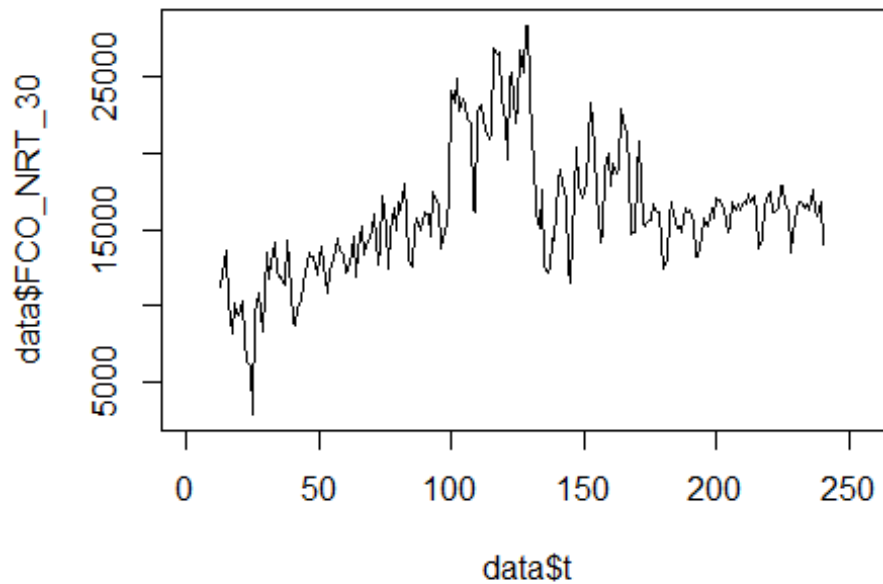


Spojení letiště

Řím Fiumicino -> letiště Narita

```
data$FCO_NRT_30 <- data$FCO_NRT/data$days * 30
```

```
plot(data$FCO_NRT_30~data$t, t="l")
```



```
lm_FCO_NRT1 <- glm(data$FCO_NRT_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_FCO_NRT1)
```

```
##
## Call:
## glm(formula = data$FCO_NRT_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -8157.9  -1409.1   -261.6   1238.4  12742.6
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  13766.899    551.857  24.947 < 2e-16 ***
## data$t       14.306      3.466   4.128 5.23e-05 ***
## data$X2001_FC -3347.096    863.178  -3.878 0.00014 ***
## data$X2001_TER -3045.966    751.809  -4.052 7.10e-05 ***
## data$X2003_SARS -2306.932    984.687  -2.343 0.02005 *
## data$X2005_FLU  -815.801    817.612  -0.998 0.31950
## data$X2008_FC  3778.467    646.957   5.840 1.90e-08 ***
## data$X2009_SF  7078.401    753.049   9.400 < 2e-16 ***
## data$X2010_ER  1827.714   1359.430   1.344 0.18021
## data$X2012_MERS -1116.688    941.033  -1.187 0.23666
```

```

## data$X2013_FLU    3347.067    839.256    3.988 9.12e-05 ***
## data$X2019_CV    -1763.894    1849.122   -0.954  0.34120
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6535567)
##
##      Null deviance: 3925261784  on 227  degrees of freedom
## Residual deviance: 1411682570  on 216  degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4238.7
##
## Number of Fisher Scoring iterations: 2

lm_FCO_NRT2 <- glm(data$FCO_NRT_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2013_FLU)
summary(lm_FCO_NRT2)

##
## Call:
## glm(formula = data$FCO_NRT_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2013_FLU)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -8120.6  -1443.6   -252.6   1348.6  12870.6
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  13639.930    499.032  27.333 < 2e-16 ***
## data$t        14.298      3.176   4.501 1.09e-05 ***
## data$X2001_FC -3249.909    848.952  -3.828 0.000168 ***
## data$X2001_TER -2956.165    740.526  -3.992 8.93e-05 ***
## data$X2003_SARS -2202.099    975.172  -2.258 0.024916 *
## data$X2008_FC  3772.179    635.013   5.940 1.10e-08 ***
## data$X2009_SF  7715.441    642.458  12.009 < 2e-16 ***
## data$X2013_FLU  3475.370    837.708   4.149 4.78e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6568487)
##
##      Null deviance: 3925261784  on 227  degrees of freedom
## Residual deviance: 1445067085  on 220  degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4236
##
## Number of Fisher Scoring iterations: 2

```



```

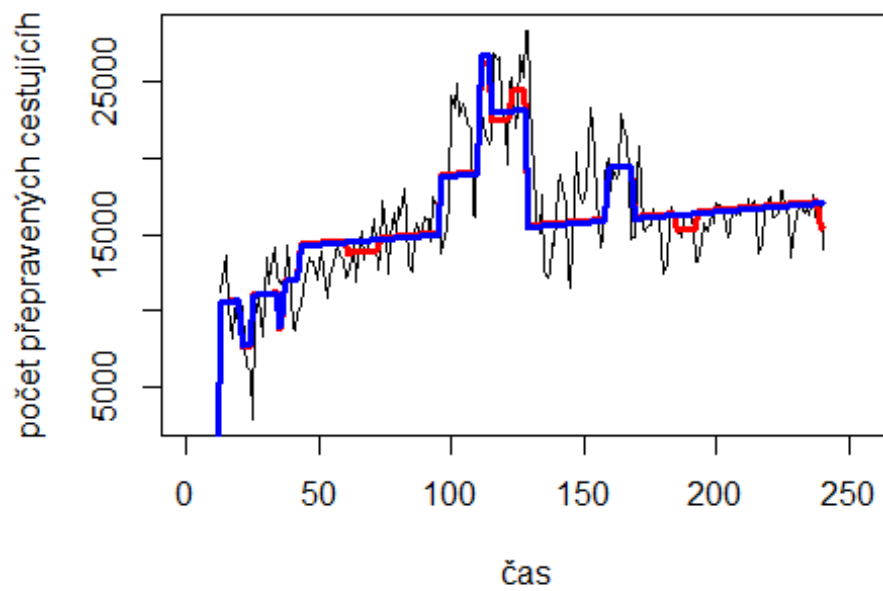
lm_FCO_NRT3 <- lm(data$FCO_NRT_30~data$t+data$X2001_FC+data$X2001_TER+data$X2
003_SARS+data$X2008_FC+data$X2009_SF+data$X2013_FLU)
summary(lm_FCO_NRT3)

##
## Call:
## lm(formula = data$FCO_NRT_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2013_FLU)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -8120.6 -1443.6  -252.6  1348.6 12870.6
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  13639.930    499.032  27.333 < 2e-16 ***
## data$t        14.298       3.176   4.501 1.09e-05 ***
## data$X2001_FC -3249.909    848.952  -3.828 0.000168 ***
## data$X2001_TER -2956.165    740.526  -3.992 8.93e-05 ***
## data$X2003_SARS -2202.099    975.172  -2.258 0.024916 *
## data$X2008_FC  3772.179    635.013   5.940 1.10e-08 ***
## data$X2009_SF  7715.441    642.458  12.009 < 2e-16 ***
## data$X2013_FLU  3475.370    837.708   4.149 4.78e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2563 on 220 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.6319, Adjusted R-squared:  0.6201
## F-statistic: 53.94 on 7 and 220 DF,  p-value: < 2.2e-16

plot(data$FCO_NRT_30, type="l",xlab="čas",ylab="počet přepravených cestujících
",main="FCO-NRT")
fit <- c(rep(0,12), lm_FCO_NRT1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_FCO_NRT2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

FCO-NRT

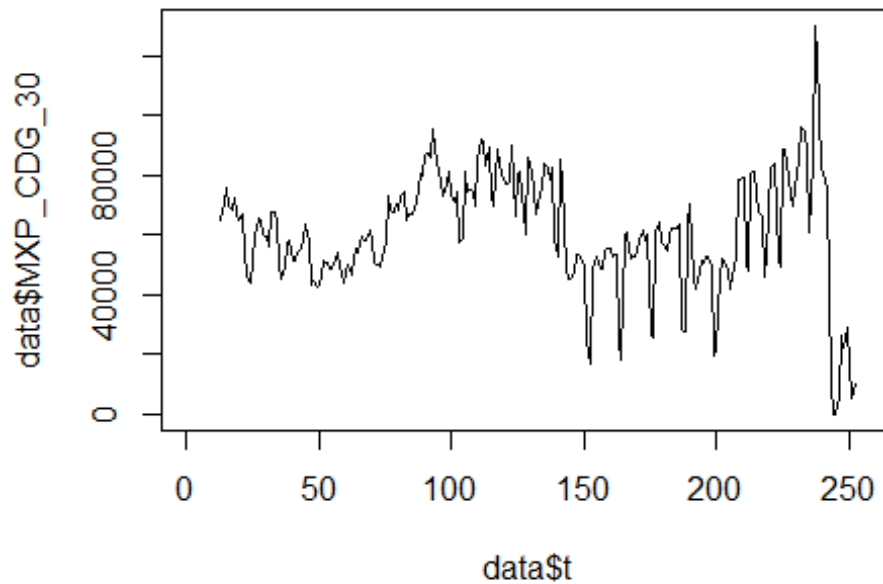


Spojení letiště

Milano Malpensa -> letiště Charles de Gaulle

```
data$MXP_CDG_30 <- data$MXP_CDG/data$days * 30
```

```
plot(data$MXP_CDG_30~data$t, t="l")
```



```
lm_MXP_CDG1 <- glm(data$MXP_CDG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MXP_CDG1)

##
## Call:
## glm(formula = data$MXP_CDG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -44391   -9929    -681     9142    66084
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   55641.47   3199.80  17.389 < 2e-16 ***
## data$t         35.36     20.77   1.703  0.08999 .
## data$X2001_FC  7690.59   5629.61   1.366  0.17323
## data$X2001_TER -787.25   4988.87  -0.158  0.87475
## data$X2008_FC 14109.25   4297.13   3.283  0.00118 **
## data$X2009_SF 16327.81   5053.25   3.231  0.00141 **
## data$X2010_ER   827.35   9179.39   0.090  0.92826
## data$X2019_CV -32641.18   5268.90  -6.195 2.63e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 298112921)
```

```

##
## Null deviance: 9.1507e+10 on 239 degrees of freedom
## Residual deviance: 6.9162e+10 on 232 degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 5374.1
##
## Number of Fisher Scoring iterations: 2

lm_MXP_CDG2 <- glm(data$MXP_CDG_30~data$X2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_MXP_CDG2)

##
## Call:
## glm(formula = data$MXP_CDG_30 ~ data$X2008_FC + data$X2009_SF +
## data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -43940 -9859 -2194 8063 69541
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 60564 1235 49.050 < 2e-16 ***
## data$X2008_FC 12943 4184 3.093 0.002220 **
## data$X2009_SF 16119 4289 3.758 0.000216 ***
## data$X2019_CV -28884 4777 -6.046 5.76e-09 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 298181799)
##
## Null deviance: 9.1507e+10 on 239 degrees of freedom
## Residual deviance: 7.0371e+10 on 236 degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 5370.2
##
## Number of Fisher Scoring iterations: 2

lm_MXP_CDG2 <- lm(data$MXP_CDG_30~data$X2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_MXP_CDG2)

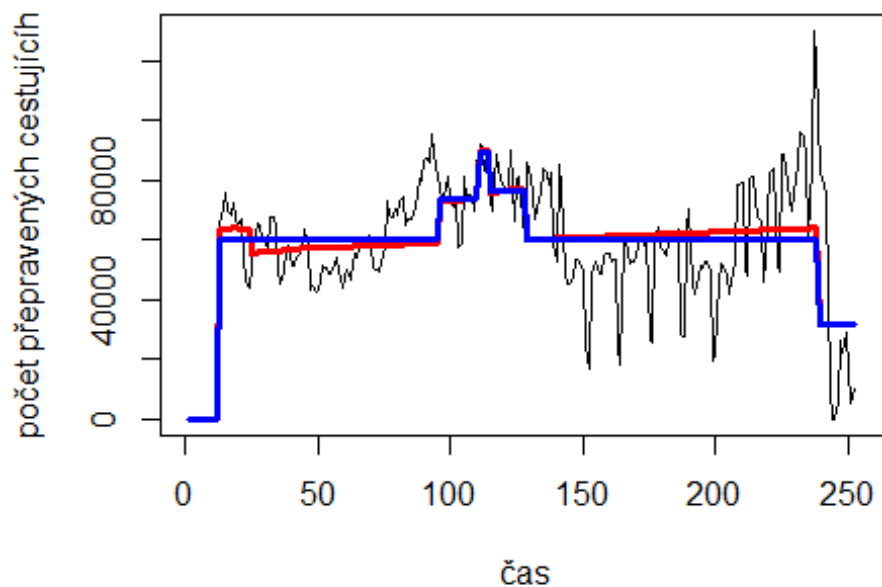
##
## Call:
## lm(formula = data$MXP_CDG_30 ~ data$X2008_FC + data$X2009_SF +
## data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -43940 -9859 -2194 8063 69541
##
## Coefficients:

```

```
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)      60564      1235  49.050 < 2e-16 ***
## data$X2008_FC    12943      4184   3.093 0.002220 **
## data$X2009_SF    16119      4289   3.758 0.000216 ***
## data$X2019_CV   -28884      4777  -6.046 5.76e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 17270 on 236 degrees of freedom
## (16 observations deleted due to missingness)
## Multiple R-squared:  0.231, Adjusted R-squared:  0.2212
## F-statistic: 23.63 on 3 and 236 DF,  p-value: 2.08e-13

plot(data$MXP_CDG_30, type="l",xlab="čas",ylab="počet přepravených cestujících",
      ,main="MXP-CDG")
fit <- c(rep(0,12), lm_MXP_CDG1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_MXP_CDG2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

MXP-CDG

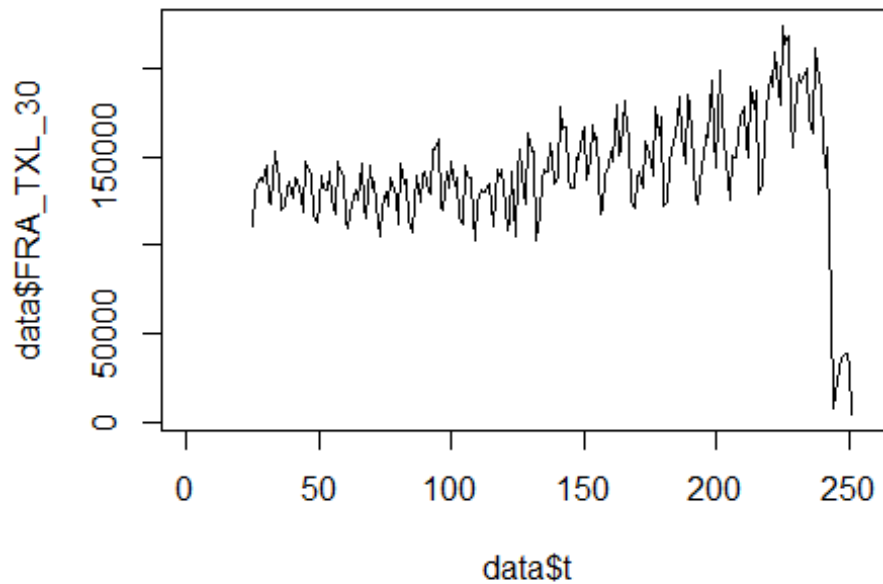


3. Spojení letiště

Frankfurt am MAin Airport -> letiště Berlin Tegel Airport

```
data$FRA_TXL_30 <- data$FRA_TXL/data$days * 30
```

```
plot(data$FRA_TXL_30~data$t, t="l")
```



```
lm_FRA_TXL1 <- glm(data$FRA_TXL_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_FRA_TXL1)

##
## Call:
## glm(formula = data$FRA_TXL_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -67268  -13573    -559    12978   118237
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   110457.64   4420.51   24.988  <2e-16 ***
## data$t         272.25     28.51    9.548  <2e-16 ***
## data$X2001_FC          NA          NA          NA      NA
## data$X2001_TER   14446.07   7619.91    1.896   0.0593 .
## data$X2008_FC   -7265.46   5782.78   -1.256   0.2103
## data$X2009_SF  -13217.67   6790.53   -1.946   0.0529 .
## data$X2010_ER    2611.95  12328.46    0.212   0.8324
## data$X2019_CV -106864.08   7288.41  -14.662  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 537721482)
```

```

##
## Null deviance: 2.4883e+11 on 226 degrees of freedom
## Residual deviance: 1.1830e+11 on 220 degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 5216.4
##
## Number of Fisher Scoring iterations: 2

lm_FRA_TXL2 <- glm(data$FRA_TXL_30~data$t+data$X2001_TER+data$X2009_SF+data$X2019_CV)
summary(lm_FRA_TXL2)

##
## Call:
## glm(formula = data$FRA_TXL_30 ~ data$t + data$X2001_TER + data$X2009_SF +
## data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -67305 -13894 -45 12257 118274
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 109000.65 4268.36 25.537 <2e-16 ***
## data$t 278.45 28.09 9.914 <2e-16 ***
## data$X2001_TER 15713.68 7550.32 2.081 0.0386 *
## data$X2009_SF -13391.68 5750.17 -2.329 0.0208 *
## data$X2019_CV -106928.34 7283.76 -14.680 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 537075522)
##
## Null deviance: 2.4883e+11 on 226 degrees of freedom
## Residual deviance: 1.1923e+11 on 222 degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 5214.2
##
## Number of Fisher Scoring iterations: 2

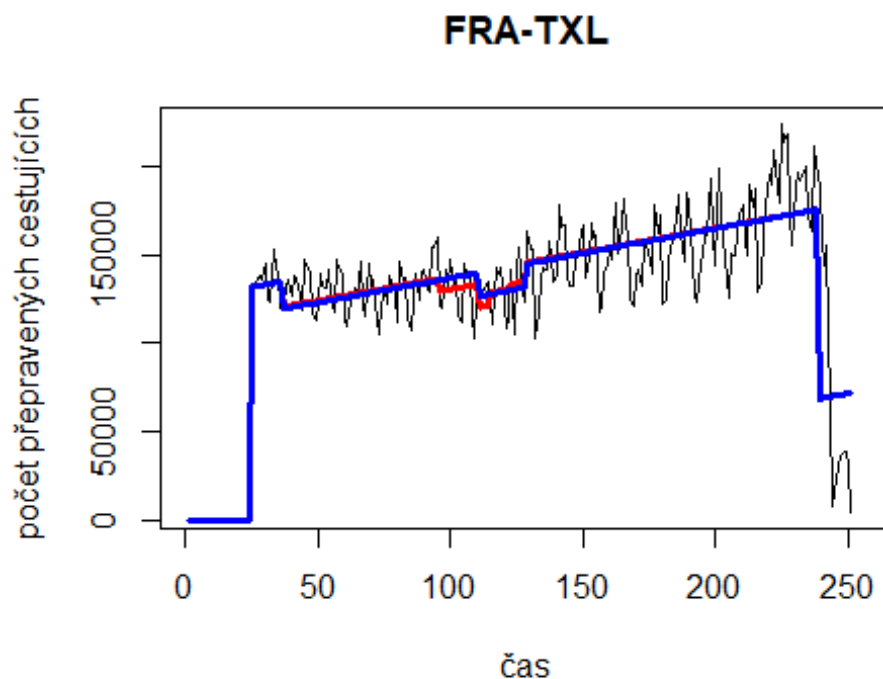
lm_FRA_TXL3 <- lm(data$FRA_TXL_30~data$t+data$X2001_TER+data$X2009_SF+data$X2019_CV)
summary(lm_FRA_TXL3)

##
## Call:
## lm(formula = data$FRA_TXL_30 ~ data$t + data$X2001_TER + data$X2009_SF +
## data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max

```

```
## -67305 -13894 -45 12257 118274
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 109000.65 4268.36 25.537 <2e-16 ***
## data$t 278.45 28.09 9.914 <2e-16 ***
## data$X2001_TER 15713.68 7550.32 2.081 0.0386 *
## data$X2009_SF -13391.68 5750.17 -2.329 0.0208 *
## data$X2019_CV -106928.34 7283.76 -14.680 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 23170 on 222 degrees of freedom
## (29 observations deleted due to missingness)
## Multiple R-squared: 0.5208, Adjusted R-squared: 0.5122
## F-statistic: 60.33 on 4 and 222 DF, p-value: < 2.2e-16

plot(data$FRA_TXL_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="FRA-TXL")
fit <- c(rep(0, 24), lm_FRA_TXL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_FRA_TXL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

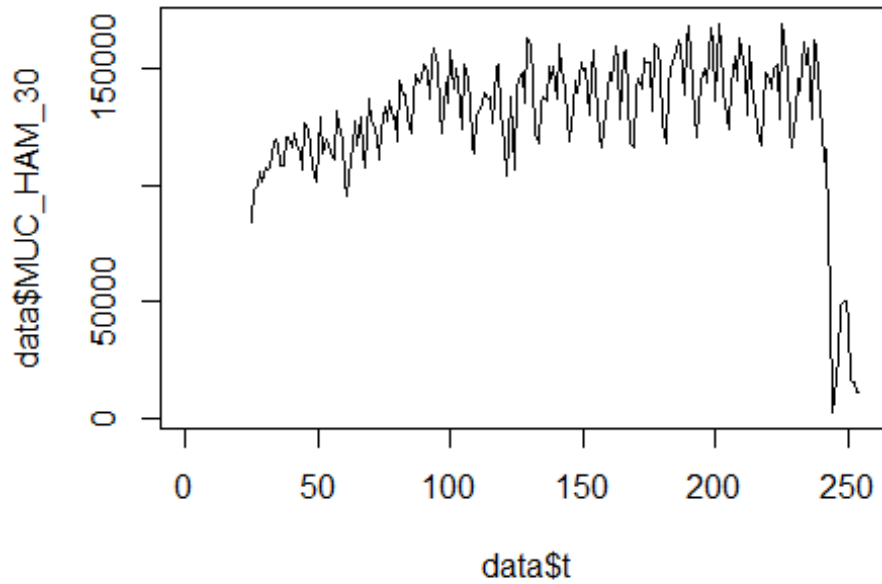


Munchen ->letišť Hamburg

Spojení letišť


```
data$MUC_HAM_30 <- data$MUC_HAM/data$days * 30
```

```
plot(data$MUC_HAM_30~data$t, t="l")
```



```
lm_MUC_HAM1 <- glm(data$MUC_HAM_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
```

```
summary(lm_MUC_HAM1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$MUC_HAM_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
##       data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -47984  -10116       246   10405   85954
```

```
##
```

```
## Coefficients: (1 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)   116614.11   3382.71  34.474 < 2e-16 ***  
## data$t        147.25     21.82   6.748 1.27e-10 ***  
## data$X2001_FC      NA         NA      NA      NA  
## data$X2001_TER  -14645.30   5831.46  -2.511  0.0127 *  
## data$X2008_FC    5386.58   4425.60   1.217  0.2248  
## data$X2009_SF   -3200.23   5196.85  -0.616  0.5387  
## data$X2010_ER    4333.68   9435.07   0.459  0.6465  
## data$X2019_CV  -102161.44  5168.87 -19.765 < 2e-16 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 314941577)
##
## Null deviance: 2.0245e+11 on 229 degrees of freedom
## Residual deviance: 7.0232e+10 on 223 degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 5162.2
##
## Number of Fisher Scoring iterations: 2

lm_MUC_HAM2 <- glm(data$MUC_HAM_30~data$t+data$X2001_TER+data$X2019_CV)
summary(lm_MUC_HAM2)

##
## Call:
## glm(formula = data$MUC_HAM_30 ~ data$t + data$X2001_TER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -47994  -10163       7   10337   85926
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  117455.04   3187.68  36.847 < 2e-16 ***
## data$t       143.52     21.34   6.725 1.42e-10 ***
## data$X2001_TER -15372.62   5731.82  -2.682 0.00786 **
## data$X2019_CV -102084.20   5150.56 -19.820 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 313068799)
##
## Null deviance: 2.0245e+11 on 229 degrees of freedom
## Residual deviance: 7.0754e+10 on 226 degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 5157.9
##
## Number of Fisher Scoring iterations: 2

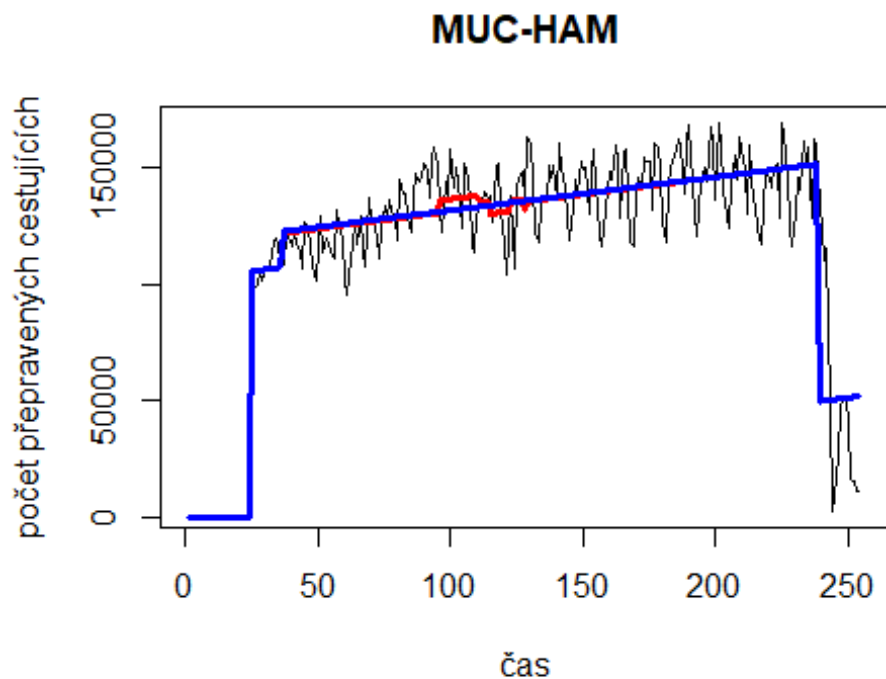
lm_MUC_HAM3 <- lm(data$MUC_HAM_30~data$t+data$X2001_TER+data$X2019_CV)
summary(lm_MUC_HAM3)

##
## Call:
## lm(formula = data$MUC_HAM_30 ~ data$t + data$X2001_TER + data$X2019_CV)
##
## Residuals:
##   Min       1Q   Median       3Q      Max
## -47994  -10163       7   10337   85926

```

```
##
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  117455.04   3187.68  36.847 < 2e-16 ***
## data$t       143.52     21.34   6.725 1.42e-10 ***
## data$X2001_TER -15372.62   5731.82  -2.682 0.00786 **
## data$X2019_CV -102084.20   5150.56 -19.820 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 17690 on 226 degrees of freedom
## (26 observations deleted due to missingness)
## Multiple R-squared:  0.6505, Adjusted R-squared:  0.6459
## F-statistic: 140.2 on 3 and 226 DF,  p-value: < 2.2e-16

plot(data$MUC_HAM_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="MUC-HAM")
fit <- c(rep(0, 24), lm_MUC_HAM1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_MUC_HAM2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

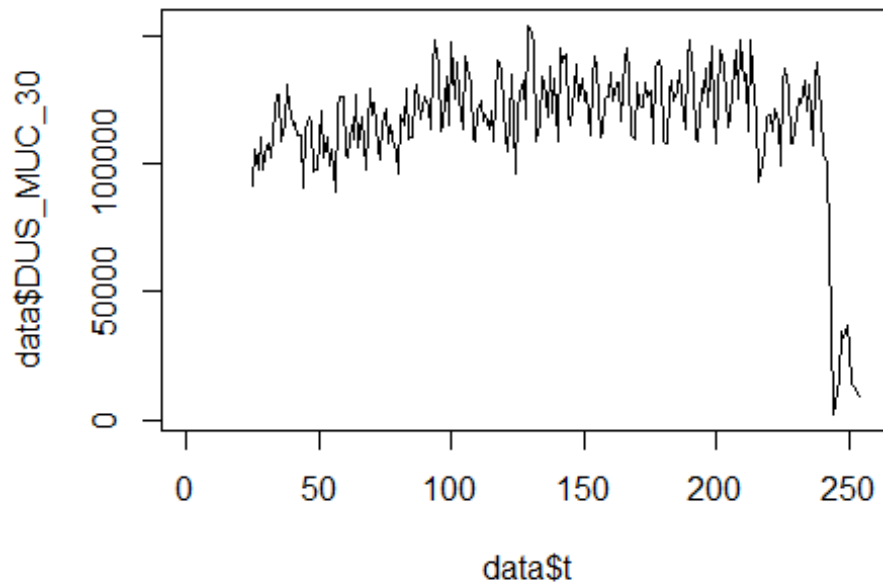


Spojení letiště

Dusseldorf -> letiště Munchen

```
data$DUS_MUC_30 <- data$DUS_MUC/data$days * 30
```

```
plot(data$DUS_MUC_30~data$t, t="l")
```



```
lm_DUS_MUC1 <- glm(data$DUS_MUC_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_DUS_MUC1)

##
## Call:
## glm(formula = data$DUS_MUC_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -39278  -10534    -558    9821   79854
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  112800.53   3128.76  36.053 < 2e-16 ***
## data$t       68.97      20.18   3.418 0.000751 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER  -6095.54   5393.67  -1.130 0.259635
## data$X2008_FC   4263.78   4093.35   1.042 0.298708
## data$X2009_SF  -1363.15   4806.70  -0.284 0.776984
## data$X2010_ER   2368.04   8726.74   0.271 0.786370
## data$X2019_CV -88281.13   4780.82 -18.466 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 269428677)
```

```

##
## Null deviance: 1.6155e+11 on 229 degrees of freedom
## Residual deviance: 6.0083e+10 on 223 degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 5126.3
##
## Number of Fisher Scoring iterations: 2

lm_DUS_MUC2 <- glm(data$DUS_MUC_30~data$t+data$X2019_CV)
summary(lm_DUS_MUC2)

##
## Call:
## glm(formula = data$DUS_MUC_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -39262 -10268 -1020 9929 79904
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 111899.41 2631.11 42.529 < 2e-16 ***
## data$t 75.65 18.11 4.178 4.2e-05 ***
## data$X2019_CV -89026.86 4725.95 -18.838 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 267929563)
##
## Null deviance: 1.6155e+11 on 229 degrees of freedom
## Residual deviance: 6.0820e+10 on 227 degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 5121.1
##
## Number of Fisher Scoring iterations: 2

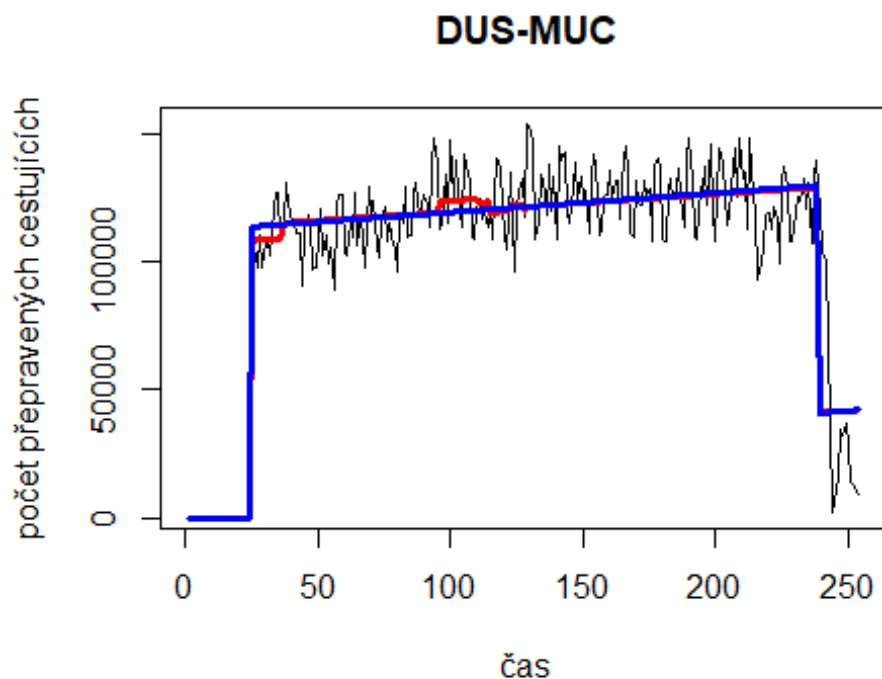
lm_DUS_MUC3 <- lm(data$DUS_MUC_30~data$t+data$X2019_CV)
summary(lm_DUS_MUC3)

##
## Call:
## lm(formula = data$DUS_MUC_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -39262 -10268 -1020 9929 79904
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 111899.41 2631.11 42.529 < 2e-16 ***
## data$t 75.65 18.11 4.178 4.2e-05 ***

```

```
## data$X2019_CV -89026.86    4725.95 -18.838 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 16370 on 227 degrees of freedom
## (26 observations deleted due to missingness)
## Multiple R-squared:  0.6235, Adjusted R-squared:  0.6202
## F-statistic:   188 on 2 and 227 DF,  p-value: < 2.2e-16

plot(data$DUS_MUC_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="DUS-MUC")
fit <- c(rep(0, 24), lm_DUS_MUC1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_DUS_MUC2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

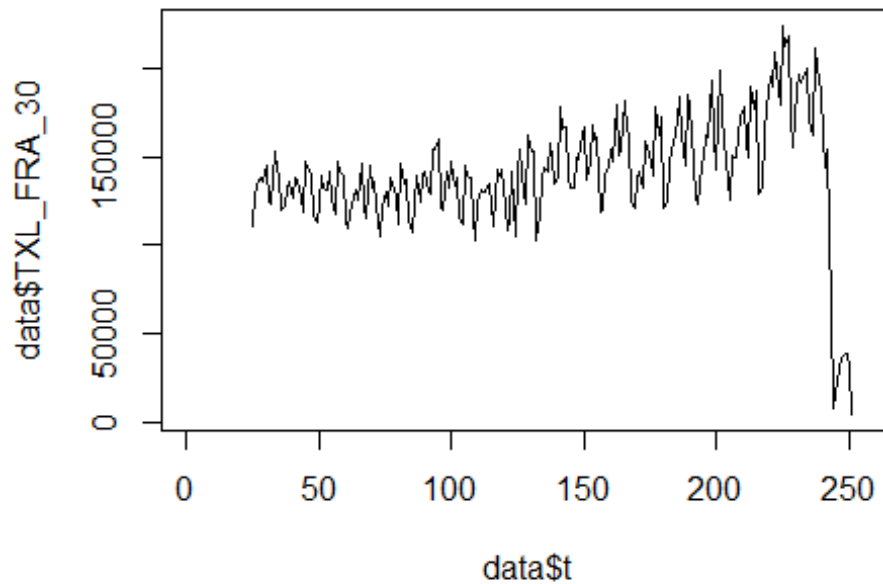


Spojení letiště

Berlin Tegel -> letiště Frankfurt

```
data$TXL_FRA_30 <- data$TXL_FRA/data$days * 30
```

```
plot(data$TXL_FRA_30~data$t, t="l")
```



```
lm_TXL_FRA1 <- glm(data$TXL_FRA_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_TXL_FRA1)

##
## Call:
## glm(formula = data$TXL_FRA_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -67216 -13573    -513   12960  118243
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   110517.35   4417.47   25.018  <2e-16 ***
## data$t         271.74     28.49    9.537  <2e-16 ***
## data$X2001_FC          NA          NA          NA      NA
## data$X2001_TER   14401.71   7614.67    1.891   0.0599 .
## data$X2008_FC   -7272.67   5778.81   -1.259   0.2095
## data$X2009_SF  -13216.10   6785.86   -1.948   0.0527 .
## data$X2010_ER    2613.56  12319.98    0.212   0.8322
## data$X2019_CV -106809.35   7283.39  -14.665  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 536982253)
```

```

##
##      Null deviance: 2.4847e+11  on 226  degrees of freedom
## Residual deviance: 1.1814e+11  on 220  degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 5216.1
##
## Number of Fisher Scoring iterations: 2

lm_TXL_FRA2 <- glm(data$TXL_FRA_30~data$t+data$X2001_TER+data$X2009_SF+data$X
2019_CV)
summary(lm_TXL_FRA2)

##
## Call:
## glm(formula = data$TXL_FRA_30 ~ data$t + data$X2001_TER + data$X2009_SF +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -67254  -13884       32   12263  118280
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   109058.92   4265.48  25.568  <2e-16 ***
## data$t         277.96     28.07   9.903  <2e-16 ***
## data$X2001_TER 15670.57   7545.22  2.077  0.0390 *
## data$X2009_SF -13390.56   5746.29 -2.330  0.0207 *
## data$X2019_CV -106873.67   7278.84 -14.683  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 536351139)
##
##      Null deviance: 2.4847e+11  on 226  degrees of freedom
## Residual deviance: 1.1907e+11  on 222  degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 5213.9
##
## Number of Fisher Scoring iterations: 2

lm_TXL_FRA3 <- lm(data$TXL_FRA_30~data$t+data$X2001_TER+data$X2009_SF+data$X2
019_CV)
summary(lm_TXL_FRA3)

##
## Call:
## lm(formula = data$TXL_FRA_30 ~ data$t + data$X2001_TER + data$X2009_SF +
##      data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

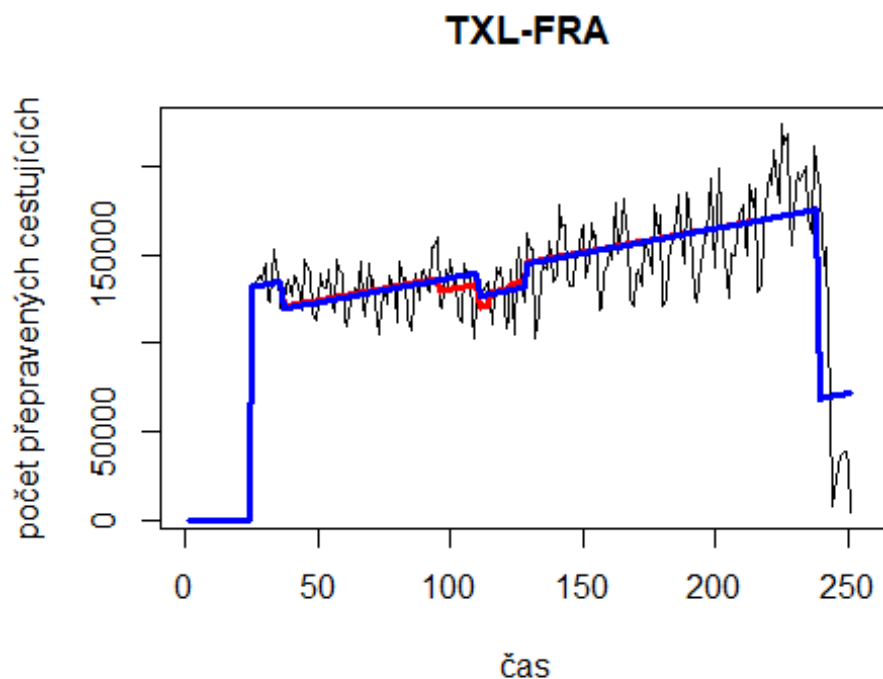


```

## -67254 -13884      32 12263 118280
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  109058.92   4265.48  25.568 <2e-16 ***
## data$t       277.96      28.07   9.903 <2e-16 ***
## data$X2001_TER 15670.57   7545.22  2.077  0.0390 *
## data$X2009_SF -13390.56   5746.29 -2.330  0.0207 *
## data$X2019_CV -106873.67  7278.84 -14.683 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 23160 on 222 degrees of freedom
## (29 observations deleted due to missingness)
## Multiple R-squared:  0.5208, Adjusted R-squared:  0.5122
## F-statistic: 60.32 on 4 and 222 DF,  p-value: < 2.2e-16

plot(data$TXL_FRA_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
      main = "TXL-FRA")
fit <- c(rep(0, 24), lm_TXL_FRA1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_TXL_FRA2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

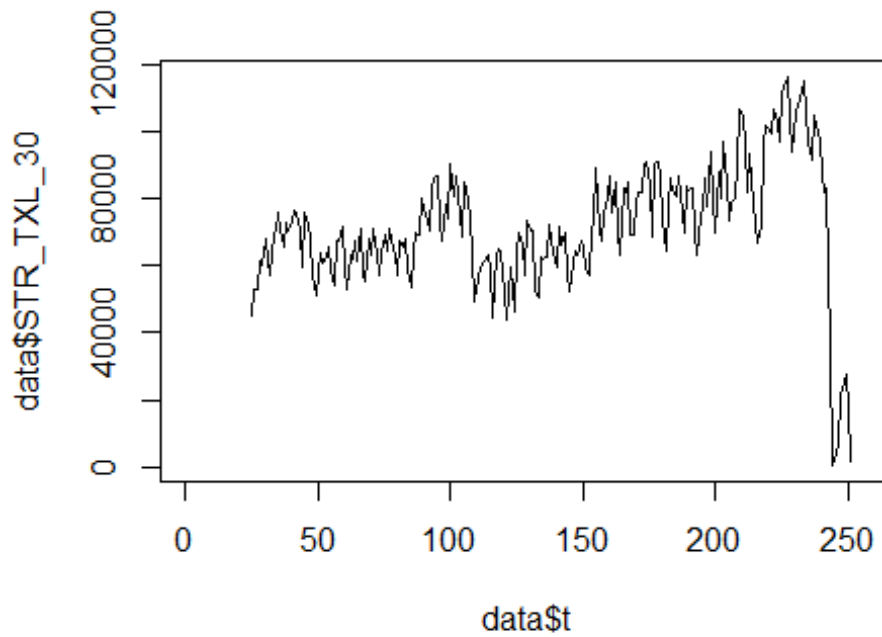


Stuttgart -> letiště Berlin Tegel

Spojení letiště

```
data$STR_TXL_30 <- data$STR_TXL/data$days * 30
```

```
plot(data$STR_TXL_30~data$t, t="l")
```



```
lm_STR_TXL1 <- glm(data$STR_TXL_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
```

```
summary(lm_STR_TXL1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$STR_TXL_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
##       data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -36926  -7906    -225    7456   60811
```

```
##
```

```
## Coefficients: (1 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)    52295.30    2556.52   20.456 < 2e-16 ***  
## data$t         166.28      16.49   10.083 < 2e-16 ***  
## data$X2001_FC      NA         NA      NA      NA  
## data$X2001_TER    4668.17    4406.83    1.059  0.291  
## data$X2008_FC    4672.08    3344.36    1.397  0.164  
## data$X2009_SF  -16058.67    3927.17   -4.089 6.07e-05 ***  
## data$X2010_ER    3895.33    7129.92    0.546  0.585  
## data$X2019_CV  -55730.69    4215.11  -13.222 < 2e-16 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 179849722)
##
##      Null deviance: 8.0822e+10  on 226  degrees of freedom
## Residual deviance: 3.9567e+10  on 220  degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 4967.8
##
## Number of Fisher Scoring iterations: 2

lm_STR_TXL2 <- glm(data$STR_TXL_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_STR_TXL2)

##
## Call:
## glm(formula = data$STR_TXL_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -36868   -8285    -69     7683    60753
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   54212.15    2190.77  24.746 < 2e-16 ***
## data$t         156.68      14.86  10.544 < 2e-16 ***
## data$X2009_SF -14707.59    3307.64  -4.447 1.38e-05 ***
## data$X2019_CV -55294.60    4187.20 -13.206 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 179739547)
##
##      Null deviance: 8.0822e+10  on 226  degrees of freedom
## Residual deviance: 4.0082e+10  on 223  degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 4964.8
##
## Number of Fisher Scoring iterations: 2

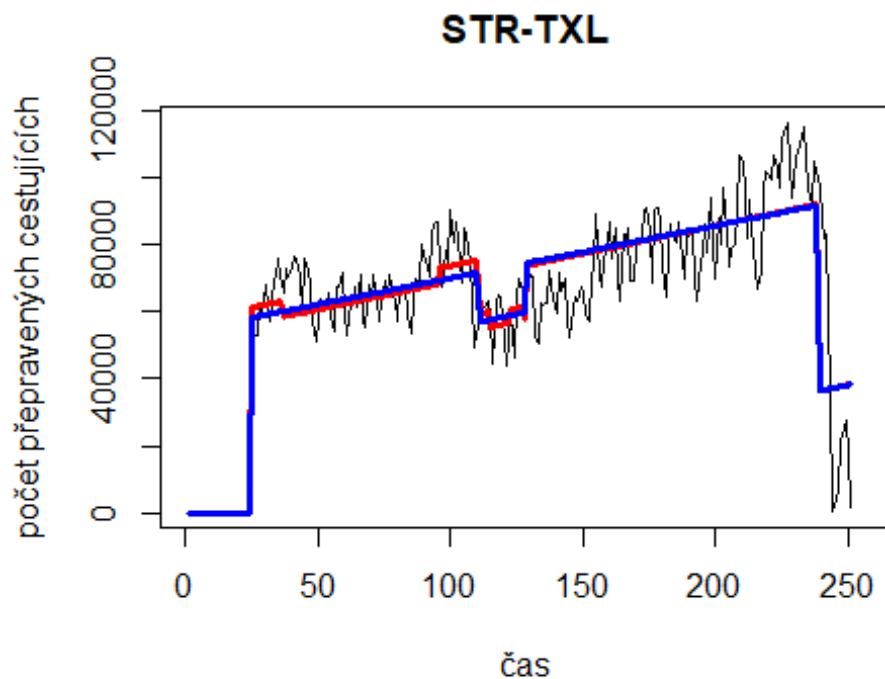
lm_STR_TXL2 <- lm(data$STR_TXL_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_STR_TXL2)

##
## Call:
## lm(formula = data$STR_TXL_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -36868   -8285    -69     7683    60753

```

```
##
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  54212.15   2190.77   24.746 < 2e-16 ***
## data$t       156.68     14.86   10.544 < 2e-16 ***
## data$X2009_SF -14707.59  3307.64  -4.447 1.38e-05 ***
## data$X2019_CV -55294.60  4187.20 -13.206 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 13410 on 223 degrees of freedom
## (29 observations deleted due to missingness)
## Multiple R-squared:  0.5041, Adjusted R-squared:  0.4974
## F-statistic: 75.55 on 3 and 223 DF,  p-value: < 2.2e-16

plot(data$STR_TXL_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
      main = "STR-TXL")
fit <- c(rep(0, 24), lm_STR_TXL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_STR_TXL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

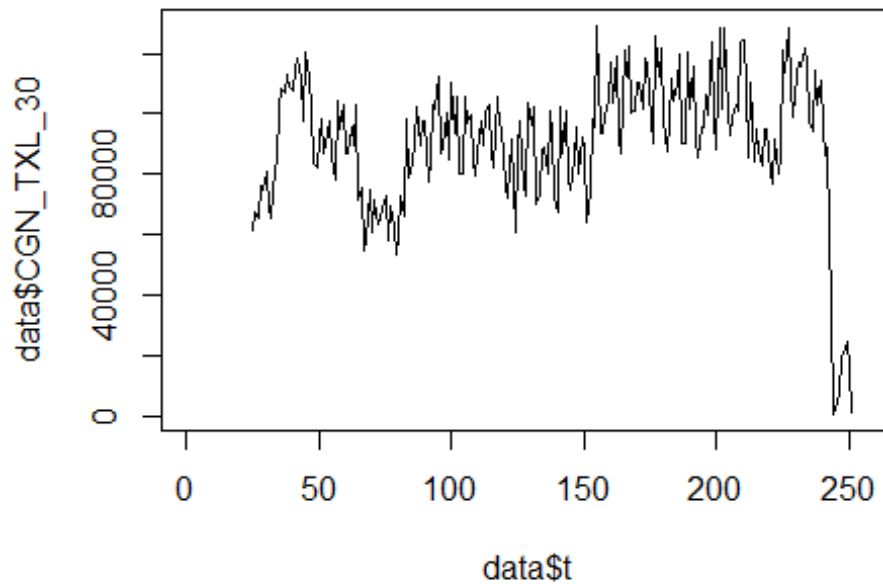


Spojení letiště

Koln Bonn -> letiště Berlin Tegel

```
data$CGN_TXL_30 <- data$CGN_TXL/data$days * 30
```

```
plot(data$CGN_TXL_30~data$t, t="l")
```



```
lm_CGN_TXL1 <- glm(data$CGN_TXL_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_CGN_TXL1)

##
## Call:
## glm(formula = data$CGN_TXL_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -38605  -12055    -819   11429   72388
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    81783.54    3391.25  24.116 < 2e-16 ***
## data$t          97.50       21.87   4.457 1.32e-05 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER  -6597.89    5845.70  -1.129  0.260
## data$X2008_FC   2416.12    4436.33   0.545  0.587
## data$X2009_SF  -4793.16    5209.43  -0.920  0.359
## data$X2010_ER  -6150.96    9457.92  -0.650  0.516
## data$X2019_CV -66443.56    5591.38 -11.883 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 316468878)
```

```

##
## Null deviance: 1.1692e+11 on 226 degrees of freedom
## Residual deviance: 6.9623e+10 on 220 degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 5096.1
##
## Number of Fisher Scoring iterations: 2

lm_CGN_TXL2 <- glm(data$CGN_TXL_30~data$t+data$X2019_CV)
summary(lm_CGN_TXL2)

##
## Call:
## glm(formula = data$CGN_TXL_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -38664 -12000 -1140 11489 72447
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 79790.87 2859.52 27.904 < 2e-16 ***
## data$t 107.31 19.68 5.453 1.31e-07 ***
## data$X2019_CV -66854.93 5550.52 -12.045 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 316415767)
##
## Null deviance: 1.1692e+11 on 226 degrees of freedom
## Residual deviance: 7.0877e+10 on 224 degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 5092.2
##
## Number of Fisher Scoring iterations: 2

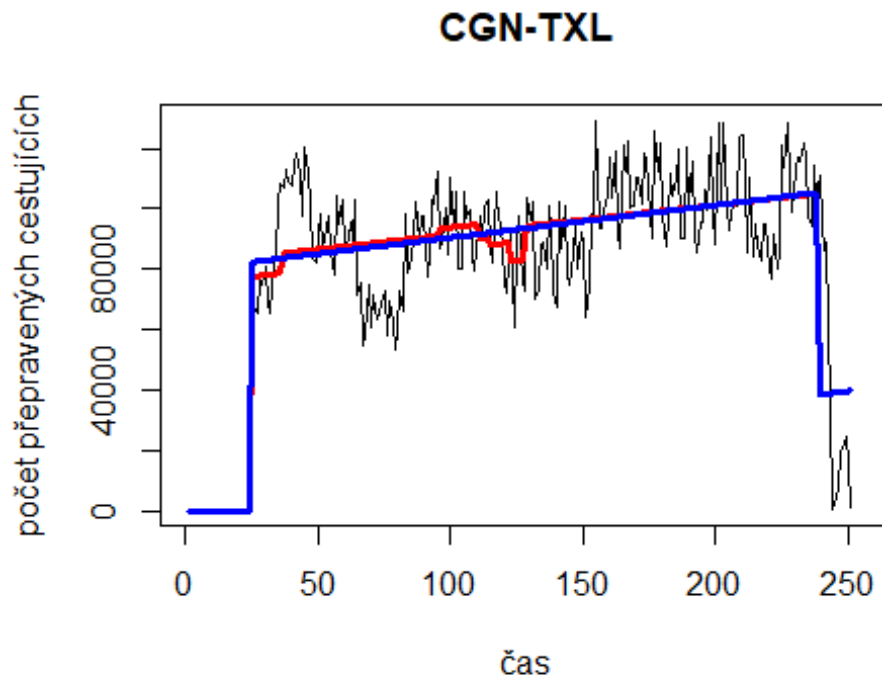
lm_CGN_TXL3 <- glm(data$CGN_TXL_30~data$t+data$X2019_CV)
summary(lm_CGN_TXL3)

##
## Call:
## glm(formula = data$CGN_TXL_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -38664 -12000 -1140 11489 72447
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 79790.87 2859.52 27.904 < 2e-16 ***
## data$t 107.31 19.68 5.453 1.31e-07 ***

```

```
## data$X2019_CV -66854.93    5550.52 -12.045 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 316415767)
##
## Null deviance: 1.1692e+11 on 226 degrees of freedom
## Residual deviance: 7.0877e+10 on 224 degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 5092.2
##
## Number of Fisher Scoring iterations: 2

plot(data$CGN_TXL_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "CGN-TXL")
fit <- c(rep(0, 24), lm_CGN_TXL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CGN_TXL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

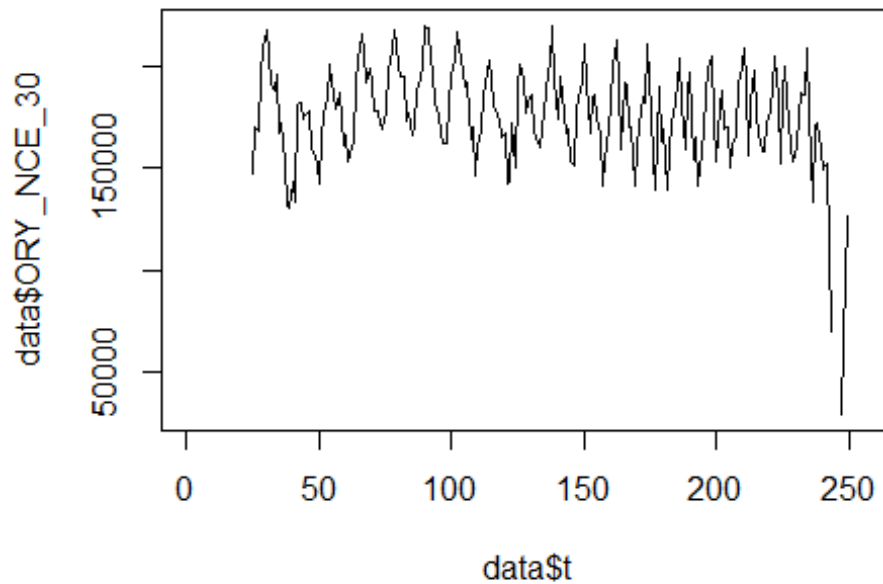


Spojení letiště

Orly -> letiště Nice

```
data$ORY_NCE_30 <- data$ORY_NCE/data$days * 30
```

```
plot(data$ORY_NCE_30~data$t, t="l")
```



```
lm_ORY_NCE1 <- glm(data$ORY_NCE_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ORY_NCE1)
```

```
##
## Call:
## glm(formula = data$ORY_NCE_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -83378  -14972    474    14562   46226
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  179110.79   4062.97  44.084 < 2e-16 ***
## data$t       -13.28     26.21  -0.507  0.613
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER    6744.21   7003.32  0.963  0.337
## data$X2008_FC    5594.08   5314.80  1.053  0.294
## data$X2009_SF   -4965.05   6240.99 -0.796  0.427
## data$X2010_ER    8815.12  11330.74  0.778  0.437
## data$X2019_CV  -62843.02   8155.70 -7.705 4.74e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 454209615)
```



```

##
## Null deviance: 1.3187e+11 on 221 degrees of freedom
## Residual deviance: 9.7655e+10 on 215 degrees of freedom
## (34 observations deleted due to missingness)
## AIC: 5064.3
##
## Number of Fisher Scoring iterations: 2

lm_ORY_NCE2 <- glm(data$ORY_NCE_30~data$X2019_CV)
summary(lm_ORY_NCE2)

##
## Call:
## glm(formula = data$ORY_NCE_30 ~ data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -83423 -12925 -595 14779 46288
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 178028 1452 122.590 < 2e-16 ***
## data$X2019_CV -64995 7650 -8.496 2.97e-15 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 451312189)
##
## Null deviance: 1.3187e+11 on 221 degrees of freedom
## Residual deviance: 9.9289e+10 on 220 degrees of freedom
## (34 observations deleted due to missingness)
## AIC: 5057.9
##
## Number of Fisher Scoring iterations: 2

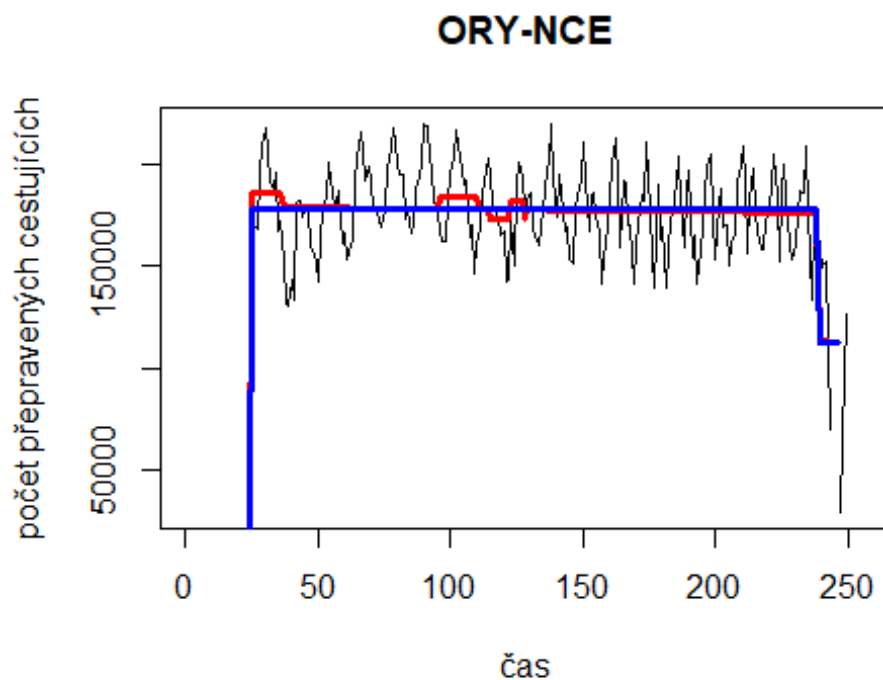
lm_ORY_NCE3 <- lm(data$ORY_NCE_30~data$X2019_CV)
summary(lm_ORY_NCE3)

##
## Call:
## lm(formula = data$ORY_NCE_30 ~ data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -83423 -12925 -595 14779 46288
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 178028 1452 122.590 < 2e-16 ***
## data$X2019_CV -64995 7650 -8.496 2.97e-15 ***
## ---

```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21240 on 220 degrees of freedom
## (34 observations deleted due to missingness)
## Multiple R-squared:  0.247, Adjusted R-squared:  0.2436
## F-statistic: 72.18 on 1 and 220 DF,  p-value: 2.969e-15

plot(data$ORY_NCE_30, type="l",xlab="čas",ylab="počet přepravených cestujících",main="ORY-NCE")
fit <- c(rep(0, 24), lm_ORY_NCE1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_ORY_NCE2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

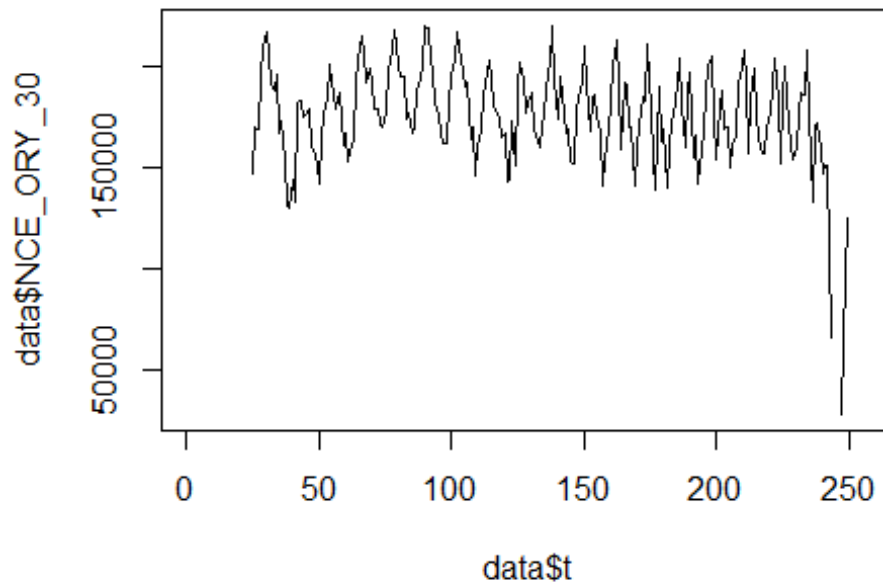


Spojení letiště

Nice -> letiště Paříž Orly

```
data$NCE_ORY_30 <- data$NCE_ORY/data$days * 30
```

```
plot(data$NCE_ORY_30~data$t, t="l")
```



```
lm_NCE_ORY1 <- glm(data$NCE_ORY_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary

## function (object, ...)
## UseMethod("summary")
## <bytecode: 0x000000001530ce70>
## <environment: namespace:base>

summary(lm_NCE_ORY1)

##
## Call:
## glm(formula = data$NCE_ORY_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -82828  -14776    437   14469   47232
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  179316.96   4071.47  44.042 < 2e-16 ***
## data$t       -15.15     26.26  -0.577  0.565
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER    6583.20   7017.96  0.938  0.349
## data$X2008_FC    5574.18   5325.92  1.047  0.296
```

```

## data$X2009_SF      -4939.93      6254.04      -0.790      0.430
## data$X2010_ER      9124.44      11354.44      0.804      0.423
## data$X2019_CV     -64496.39      8172.76      -7.892      1.5e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 456111558)
##
##      Null deviance: 1.3423e+11  on 221  degrees of freedom
## Residual deviance: 9.8064e+10  on 215  degrees of freedom
## (34 observations deleted due to missingness)
## AIC: 5065.2
##
## Number of Fisher Scoring iterations: 2

lm_NCE_ORY2 <- glm(data$NCE_ORY_30~data$X2019_CV)
summary

## function (object, ...)
## UseMethod("summary")
## <bytecode: 0x000000001530ce70>
## <environment: namespace:base>

summary(lm_NCE_ORY2)

##
## Call:
## glm(formula = data$NCE_ORY_30 ~ data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -82879  -13027   -655    14935   47302
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    177986      1456 122.274 < 2e-16 ***
## data$X2019_CV  -66857      7668  -8.719 6.94e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 453437609)
##
##      Null deviance: 1.3423e+11  on 221  degrees of freedom
## Residual deviance: 9.9756e+10  on 220  degrees of freedom
## (34 observations deleted due to missingness)
## AIC: 5059
##
## Number of Fisher Scoring iterations: 2

lm_NCE_ORY3 <- lm(data$NCE_ORY_30~data$X2019_CV)
summary

```

```

## function (object, ...)
## UseMethod("summary")
## <bytecode: 0x000000001530ce70>
## <environment: namespace:base>

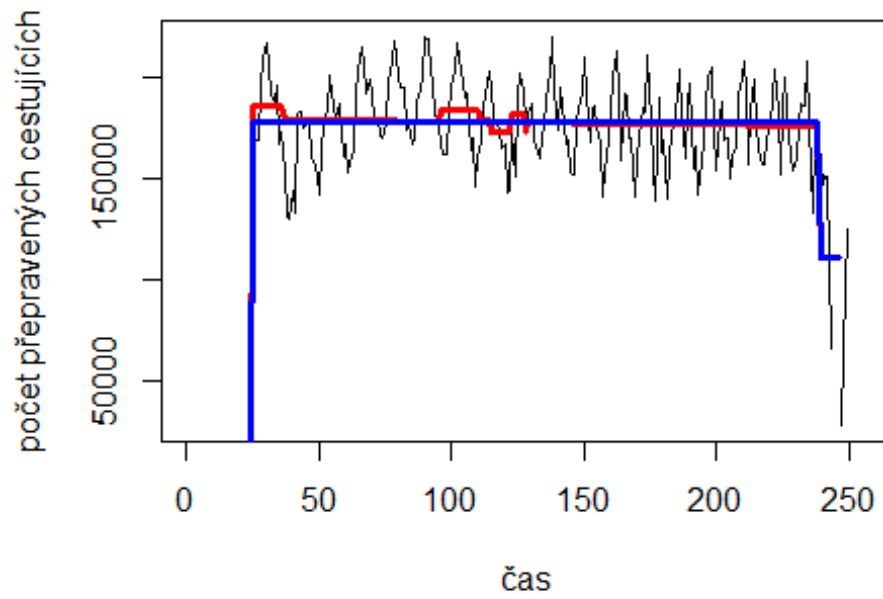
summary(lm_NCE_ORY3)

##
## Call:
## lm(formula = data$NCE_ORY_30 ~ data$X2019_CV)
##
## Residuals:
##   Min     1Q Median     3Q    Max
## -82879 -13027  -655  14935  47302
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    177986      1456 122.274 < 2e-16 ***
## data$X2019_CV  -66857      7668  -8.719 6.94e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21290 on 220 degrees of freedom
## (34 observations deleted due to missingness)
## Multiple R-squared:  0.2568, Adjusted R-squared:  0.2534
## F-statistic: 76.02 on 1 and 220 DF,  p-value: 6.935e-16

plot(data$NCE_ORY_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="NCE-ORY")
fit <- c(rep(0, 24), lm_NCE_ORY1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_NCE_ORY2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

NCE-ORY

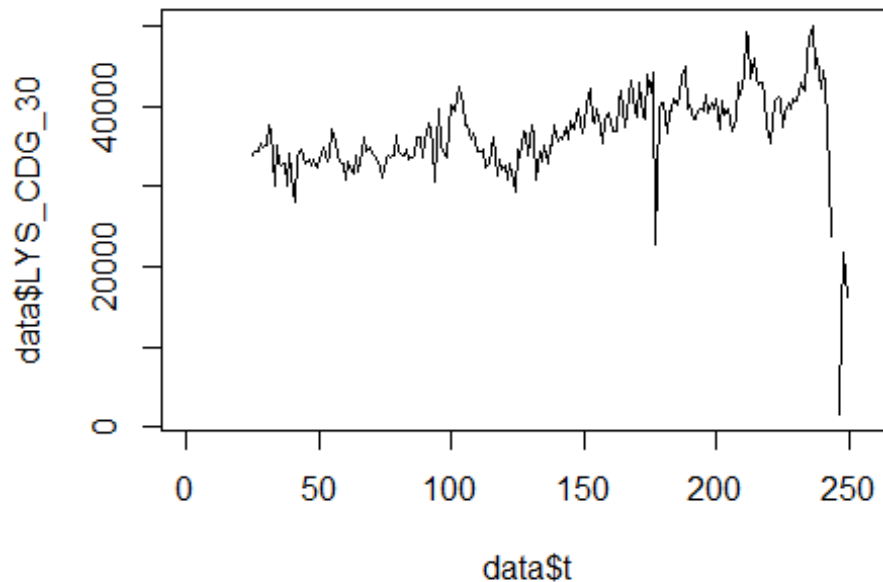


Spojení letiště

Lyon -> letiště Charles de Gaulle

```
data$LYS_CDG_30 <- data$LYS_CDG/data$days * 30
```

```
plot(data$LYS_CDG_30~data$t, t="l")
```



```
lm_LYS_CDG1 <- glm(data$LYS_CDG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LYS_CDG1)
```

```
##
## Call:
## glm(formula = data$LYS_CDG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -25707.1  -1546.8   -160.3   1423.3  17560.5
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   30138.276    755.221   39.907 < 2e-16 ***
## data$t         52.419      4.871   10.760 < 2e-16 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER   2711.053   1301.773    2.083  0.03847 *
## data$X2008_FC   1716.352    987.913    1.737  0.08375 .
## data$X2009_SF  -3355.486   1160.073   -2.892  0.00421 **
## data$X2010_ER   -77.119    2106.154   -0.037  0.97082
## data$X2019_CV -15702.285   1442.741  -10.884 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 15693511)
```

```

##
## Null deviance: 6413395430 on 222 degrees of freedom
## Residual deviance: 3389798449 on 216 degrees of freedom
## (33 observations deleted due to missingness)
## AIC: 4336.6
##
## Number of Fisher Scoring iterations: 2

lm_LYS_CDG2 <- glm(data$LYS_CDG_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_LYS_CDG2)

##
## Call:
## glm(formula = data$LYS_CDG_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -25696.4 -1543.6 -229.9 1517.6 17540.7
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 31109.075 652.663 47.665 < 2e-16 ***
## data$t 47.340 4.427 10.694 < 2e-16 ***
## data$X2009_SF -3359.375 985.360 -3.409 0.000775 ***
## data$X2019_CV -15434.415 1447.916 -10.660 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 15951329)
##
## Null deviance: 6413395430 on 222 degrees of freedom
## Residual deviance: 3493340957 on 219 degrees of freedom
## (33 observations deleted due to missingness)
## AIC: 4337.3
##
## Number of Fisher Scoring iterations: 2

lm_LYS_CDG3 <- lm(data$LYS_CDG_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_LYS_CDG3)

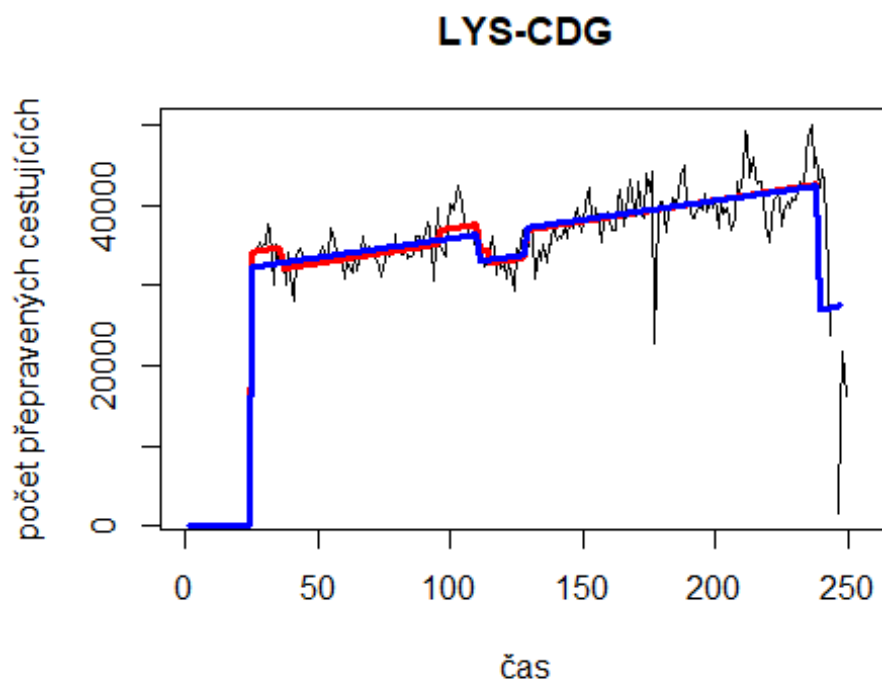
##
## Call:
## lm(formula = data$LYS_CDG_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -25696.4 -1543.6 -229.9 1517.6 17540.7
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 31109.075 652.663 47.665 < 2e-16 ***

```



```
## data$t          47.340      4.427  10.694 < 2e-16 ***
## data$X2009_SF  -3359.375    985.360  -3.409 0.000775 ***
## data$X2019_CV -15434.415  1447.916 -10.660 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3994 on 219 degrees of freedom
## (33 observations deleted due to missingness)
## Multiple R-squared:  0.4553, Adjusted R-squared:  0.4478
## F-statistic: 61.02 on 3 and 219 DF,  p-value: < 2.2e-16

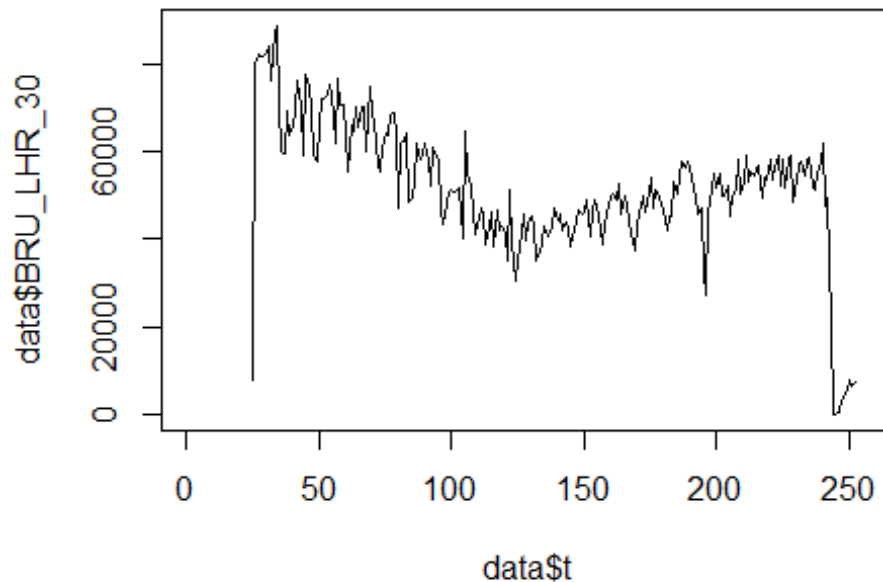
plot(data$LYS_CDG_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "LYS-CDG")
fit <- c(rep(0, 24), lm_LYS_CDG1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_LYS_CDG2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Brusel -> letiště Londýn Heathrow

```
data$BRU_LHR_30 <- data$BRU_LHR/data$days * 30
plot(data$BRU_LHR_30~data$t, t="l")
```



```
lm_BRU_LHR1 <- glm(data$BRU_LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_BRU_LHR1)

##
## Call:
## glm(formula = data$BRU_LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -66441  -6298    602    6541   42110
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   66997.93   2028.12   33.034 < 2e-16 ***
## data$t        -89.71     13.08   -6.858 6.91e-11 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER   9375.34   3496.08    2.682  0.00788 **
## data$X2008_FC  -7233.60   2653.21   -2.726  0.00692 **
## data$X2009_SF -11338.38   3115.58   -3.639  0.00034 ***
## data$X2010_ER  -6590.38   5656.44   -1.165  0.24523
## data$X2019_CV -25564.65   3252.38   -7.860 1.67e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 113194895)
```

```

##
## Null deviance: 5.3863e+10 on 227 degrees of freedom
## Residual deviance: 2.5016e+10 on 221 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4884.1
##
## Number of Fisher Scoring iterations: 2

lm_BRU_LHR2 <- glm(data$BRU_LHR_30~data$t+data$X2001_TER+data$X2008_FC+data$X
2009_SF+data$X2019_CV)
summary(lm_BRU_LHR2)

##
## Call:
## glm(formula = data$BRU_LHR_30 ~ data$t + data$X2001_TER + data$X2008_FC +
## data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -66440 -6259 564 6579 42111
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 66948.25 2029.31 32.991 < 2e-16 ***
## data$t -89.61 13.09 -6.845 7.38e-11 ***
## data$X2001_TER 9421.94 3498.67 2.693 0.00762 **
## data$X2008_FC -6796.59 2628.67 -2.586 0.01036 *
## data$X2009_SF -13228.53 2662.02 -4.969 1.34e-06 ***
## data$X2019_CV -25539.75 3254.93 -7.846 1.79e-13 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 113377170)
##
## Null deviance: 5.3863e+10 on 227 degrees of freedom
## Residual deviance: 2.5170e+10 on 222 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4883.5
##
## Number of Fisher Scoring iterations: 2

lm_BRU_LHR3 <- lm(data$BRU_LHR_30~data$t+data$X2001_TER+data$X2008_FC+data$X
009_SF+data$X2019_CV)
summary(lm_BRU_LHR3)

##
## Call:
## lm(formula = data$BRU_LHR_30 ~ data$t + data$X2001_TER + data$X2008_FC +
## data$X2009_SF + data$X2019_CV)
##
## Residuals:

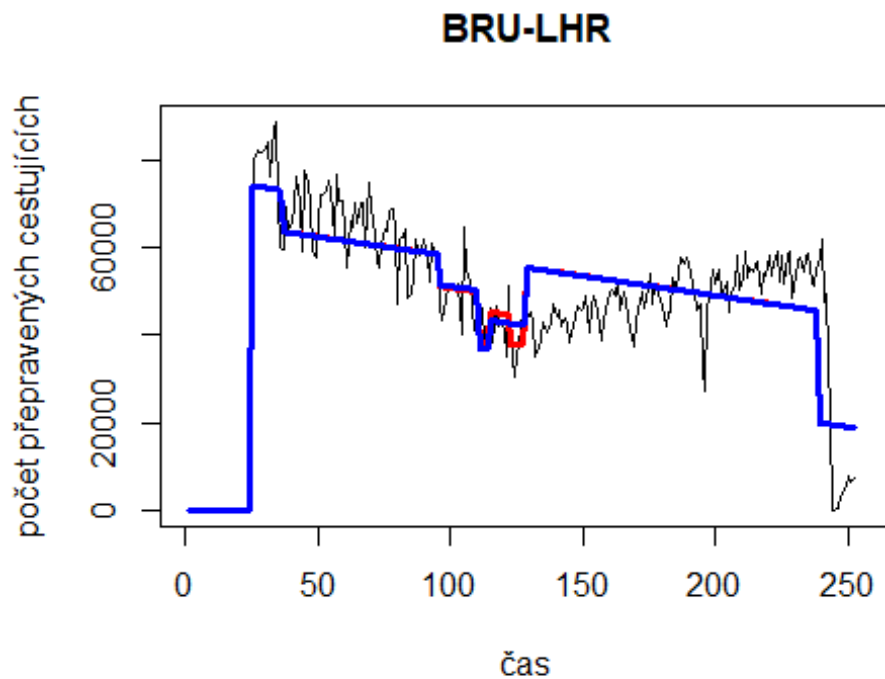
```

```

##      Min      1Q  Median      3Q      Max
## -66440 -6259   564   6579  42111
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   66948.25   2029.31   32.991 < 2e-16 ***
## data$t        -89.61     13.09   -6.845 7.38e-11 ***
## data$X2001_TER  9421.94   3498.67    2.693 0.00762 **
## data$X2008_FC -6796.59   2628.67   -2.586 0.01036 *
## data$X2009_SF -13228.53  2662.02   -4.969 1.34e-06 ***
## data$X2019_CV -25539.75  3254.93   -7.846 1.79e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 10650 on 222 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.5327, Adjusted R-squared:  0.5222
## F-statistic: 50.62 on 5 and 222 DF,  p-value: < 2.2e-16

plot(data$BRU_LHR_30, type="l",xlab = "čas",ylab = "počet přepravených cestujíc
ích", main = "BRU-LHR")
fit <- c(rep(0, 24), lm_BRU_LHR1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_BRU_LHR2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

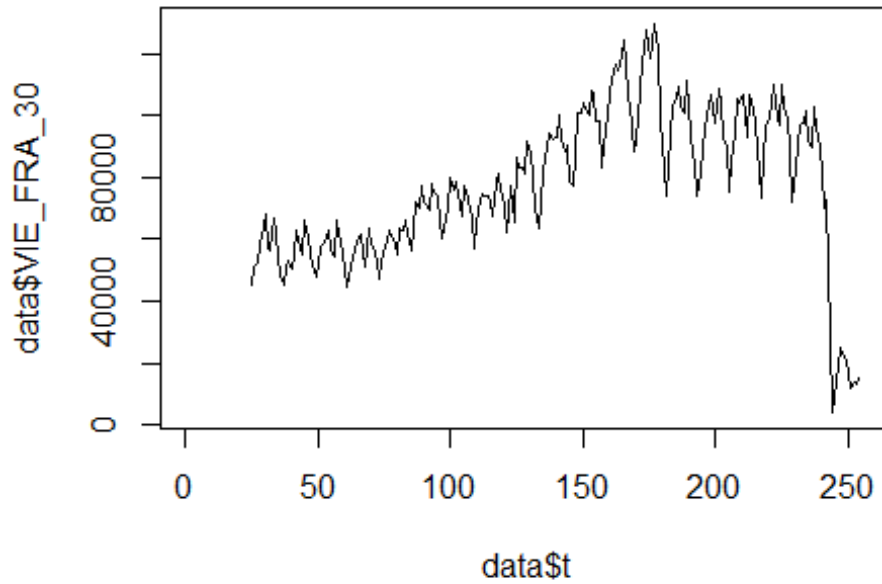


Vídeň -> letiště Frankfurt

Spojení letiště

```
data$VIE_FRA_30 <- data$VIE_FRA/data$days * 30
```

```
plot(data$VIE_FRA_30~data$t, t="l")
```



```
lm_VIE_FRA1 <- glm(data$VIE_FRA_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
```

```
summary(lm_VIE_FRA1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$VIE_FRA_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
##       data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -35231  -7991  -1457    5988   59533
```

```
##
```

```
## Coefficients: (1 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)   45400.41   2661.53  17.058 <2e-16 ***  
## data$t        271.93     17.17  15.840 <2e-16 ***  
## data$X2001_FC      NA          NA      NA      NA  
## data$X2001_TER    3168.03   4588.21  0.690  0.491  
## data$X2008_FC   -2340.76   3482.08 -0.672  0.502  
## data$X2009_SF   -3169.56   4088.90 -0.775  0.439  
## data$X2010_ER    3084.57   7423.55  0.416  0.678  
## data$X2019_CV  -80271.85   4066.89 -19.738 <2e-16 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 194967826)
##
##      Null deviance: 1.3858e+11  on 229  degrees of freedom
## Residual deviance: 4.3478e+10  on 223  degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 5051.9
##
## Number of Fisher Scoring iterations: 2

lm_VIE_FRA2 <- glm(data$VIE_FRA_30~data$t+data$X2019_CV)
summary(lm_VIE_FRA2)

##
## Call:
## glm(formula = data$VIE_FRA_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -34759   -7884   -1498    6158   59514
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   45509.95    2234.76   20.36  <2e-16 ***
## data$t         269.39      15.38   17.51  <2e-16 ***
## data$X2019_CV -79754.83    4014.03  -19.87  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 193287538)
##
##      Null deviance: 1.3858e+11  on 229  degrees of freedom
## Residual deviance: 4.3876e+10  on 227  degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 5046
##
## Number of Fisher Scoring iterations: 2

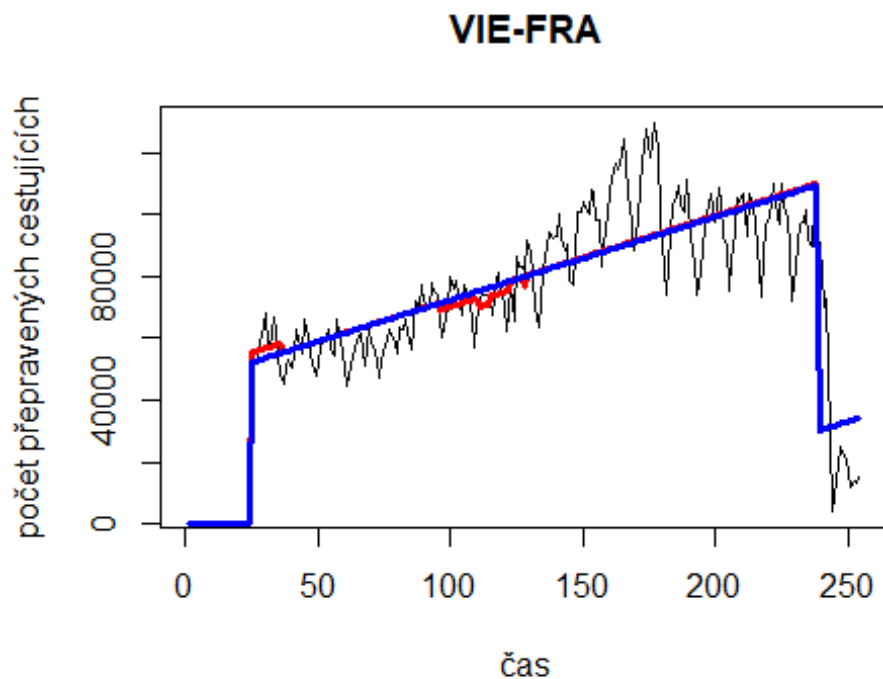
lm_VIE_FRA3 <- lm(data$VIE_FRA_30~data$t+data$X2019_CV)
summary(lm_VIE_FRA3)

##
## Call:
## lm(formula = data$VIE_FRA_30 ~ data$t + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -34759   -7884   -1498    6158   59514
##

```

```
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  45509.95   2234.76   20.36 <2e-16 ***
## data$t       269.39     15.38   17.51 <2e-16 ***
## data$X2019_CV -79754.83  4014.03  -19.87 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 13900 on 227 degrees of freedom
## (26 observations deleted due to missingness)
## Multiple R-squared:  0.6834, Adjusted R-squared:  0.6806
## F-statistic: 245 on 2 and 227 DF, p-value: < 2.2e-16

plot(data$VIE_FRA_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
      main = "VIE-FRA")
fit <- c(rep(0, 24), lm_VIE_FRA1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_VIE_FRA2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

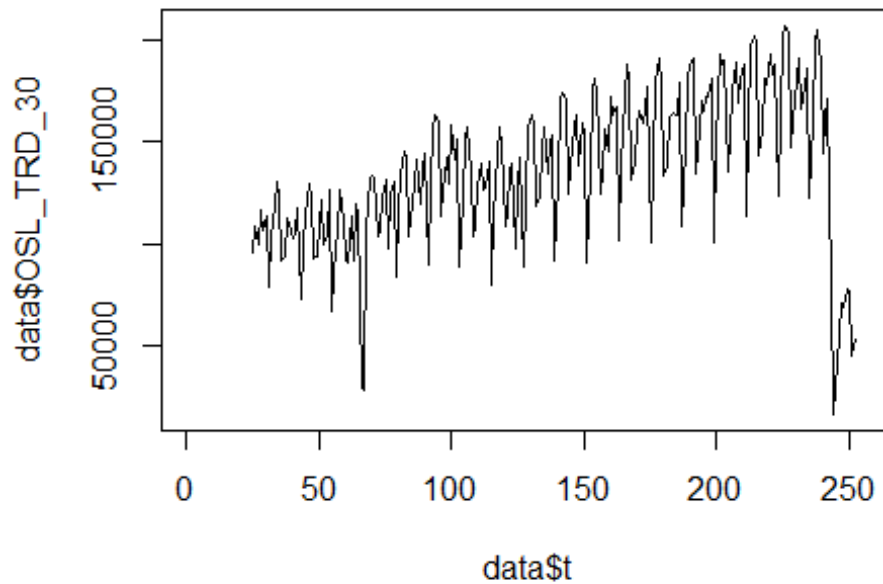


Spojení letiště

Oslo -> letiště Trondheim

```
data$OSL_TRD_30 <- data$OSL_TRD/data$days * 30
```

```
plot(data$OSL_TRD_30~data$t, t="l")
```



```
lm_OSL_TRD1 <- glm(data$OSL_TRD_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_OSL_TRD1)

##
## Call:
## glm(formula = data$OSL_TRD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -85473  -14812    3472   17763  101754
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    86997.7    4992.7  17.425  <2e-16 ***
## data$t          398.7       32.2  12.379  <2e-16 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER    8209.8    8606.4   0.954   0.341
## data$X2008_FC    3796.3    6531.4   0.581   0.562
## data$X2009_SF   -7217.9    7669.7  -0.941   0.348
## data$X2010_ER  -10342.1   13924.6  -0.743   0.458
## data$X2019_CV  -96393.6    8006.4 -12.040  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 685966802)
```



```

##
## Null deviance: 3.106e+11 on 227 degrees of freedom
## Residual deviance: 1.516e+11 on 221 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5294.9
##
## Number of Fisher Scoring iterations: 2

lm_OSL_TRD2 <- glm(data$OSL_TRD_30~data$t+data$X2019_CV)
summary(lm_OSL_TRD2)

##
## Call:
## glm(formula = data$OSL_TRD_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -86208 -14460 4036 17139 101675
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 88550.7 4213.2 21.02 <2e-16 ***
## data$t 386.5 29.0 13.33 <2e-16 ***
## data$X2019_CV -94951.4 7950.1 -11.94 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 686928756)
##
## Null deviance: 3.1060e+11 on 227 degrees of freedom
## Residual deviance: 1.5456e+11 on 225 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5291.3
##
## Number of Fisher Scoring iterations: 2

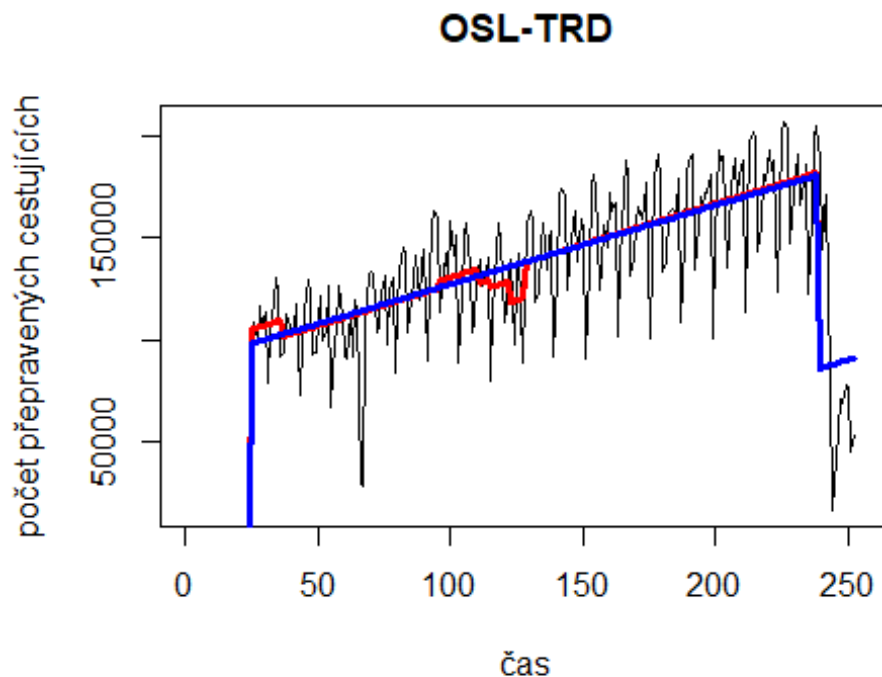
lm_OSL_TRD3 <- lm(data$OSL_TRD_30~data$t+data$X2019_CV)
summary(lm_OSL_TRD3)

##
## Call:
## lm(formula = data$OSL_TRD_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -86208 -14460 4036 17139 101675
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 88550.7 4213.2 21.02 <2e-16 ***
## data$t 386.5 29.0 13.33 <2e-16 ***

```

```
## data$X2019_CV -94951.4      7950.1  -11.94  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 26210 on 225 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.5024, Adjusted R-squared:  0.498
## F-statistic: 113.6 on 2 and 225 DF,  p-value: < 2.2e-16

plot(data$OSL_TRD_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "OSL-TRD")
fit <- c(rep(0, 24), lm_OSL_TRD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_OSL_TRD2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

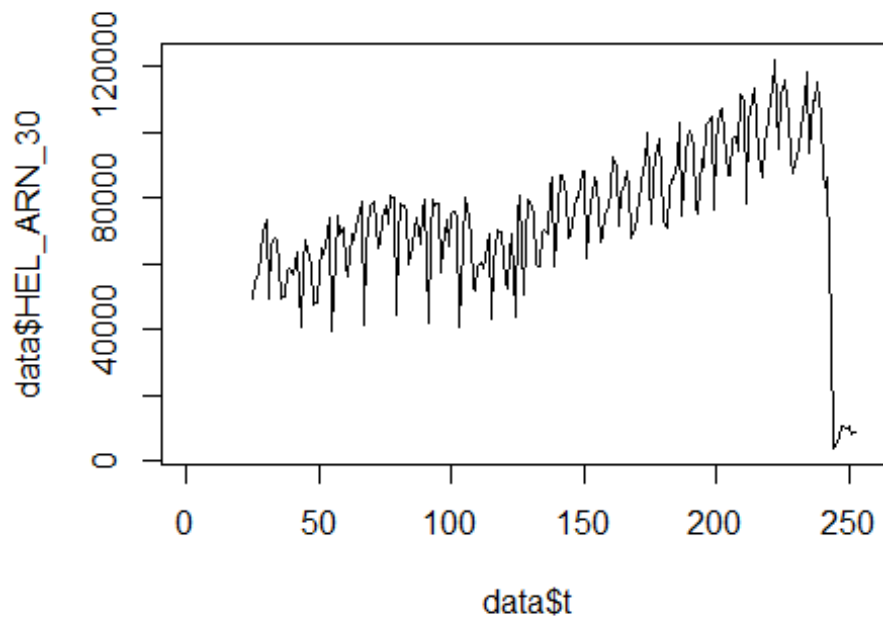


#Spojení letiště

Helsinki -> letiště Stockholm

```
data$HEL_ARN_30 <- data$HEL_ARN/data$days * 30
```

```
plot(data$HEL_ARN_30~data$t, t="l")
```



```
lm_HEL_ARN1 <- glm(data$HEL_ARN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_HEL_ARN1)

##
## Call:
## glm(formula = data$HEL_ARN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -29717   -7924     909    7824   72908
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   49164.67   2634.46  18.662 < 2e-16 ***
## data$t         222.50     16.99  13.094 < 2e-16 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER   4632.70   4541.28  1.020  0.30878
## data$X2008_FC  -5042.69   3446.42 -1.463  0.14484
## data$X2009_SF -12111.23   4047.02 -2.993  0.00308 **
## data$X2010_ER  -1065.95   7347.51 -0.145  0.88478
## data$X2019_CV -69691.32   4224.72 -16.496 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 190994066)
```

```

##
##      Null deviance: 1.1055e+11  on 227  degrees of freedom
## Residual deviance: 4.2210e+10  on 221  degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5003.4
##
## Number of Fisher Scoring iterations: 2

lm_HEL_ARN2 <- glm(data$HEL_ARN_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_HEL_ARN2)

##
## Call:
## glm(formula = data$HEL_ARN_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -31036   -7482    936    7829   72882
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  49604.00   2261.47  21.934 < 2e-16 ***
## data$t        218.42     15.34  14.239 < 2e-16 ***
## data$X2009_SF -13479.15   3414.46  -3.948 0.000106 ***
## data$X2019_CV -69127.91   4202.06 -16.451 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 191537049)
##
##      Null deviance: 1.1055e+11  on 227  degrees of freedom
## Residual deviance: 4.2904e+10  on 224  degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5001.1
##
## Number of Fisher Scoring iterations: 2

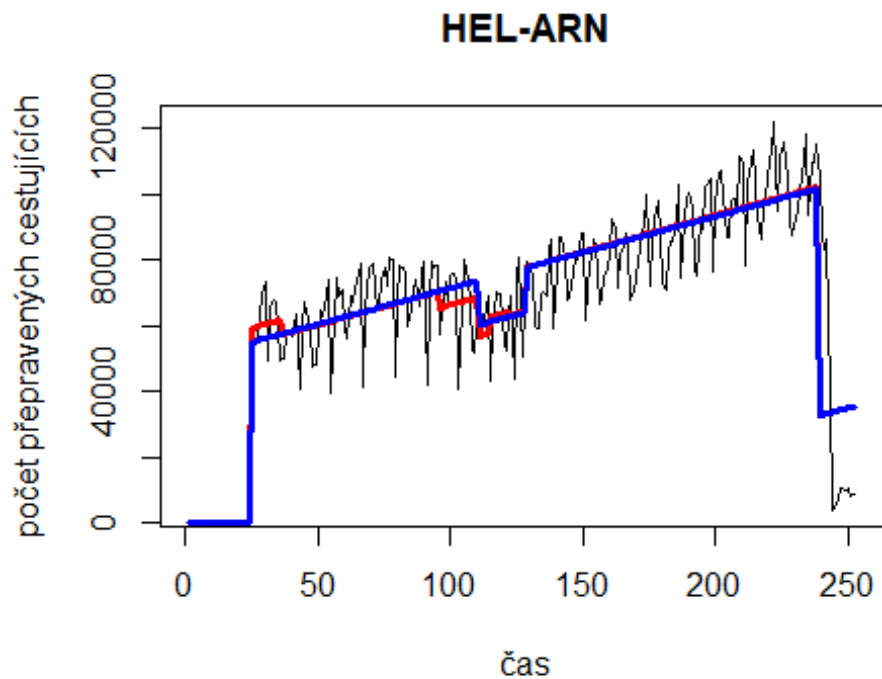
lm_HEL_ARN3 <- lm(data$HEL_ARN_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_HEL_ARN3)

##
## Call:
## lm(formula = data$HEL_ARN_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -31036   -7482    936    7829   72882
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  49604.00   2261.47  21.934 < 2e-16 ***

```

```
## data$t          218.42      15.34  14.239 < 2e-16 ***
## data$X2009_SF -13479.15   3414.46  -3.948 0.000106 ***
## data$X2019_CV -69127.91   4202.06 -16.451 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 13840 on 224 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.6119, Adjusted R-squared:  0.6067
## F-statistic: 117.7 on 3 and 224 DF,  p-value: < 2.2e-16

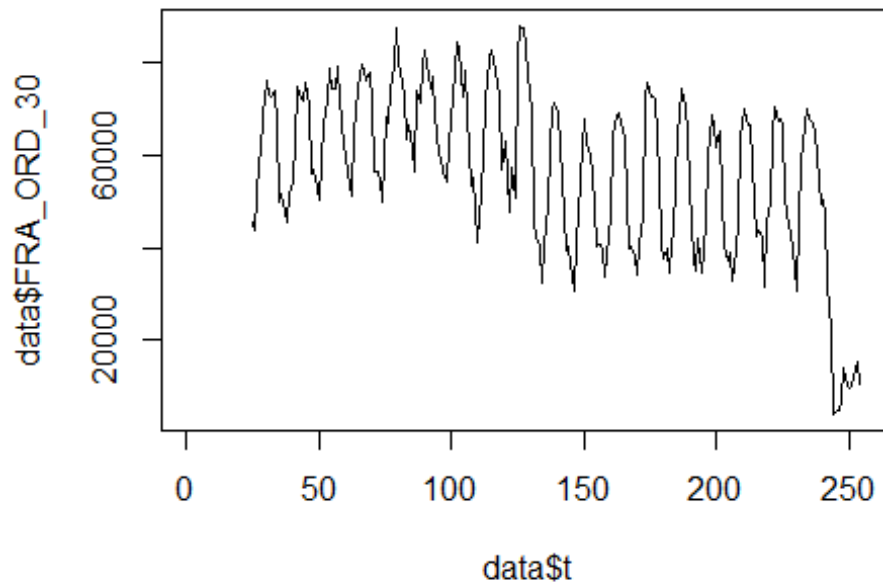
plot(data$HEL_ARN_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "HEL-ARN")
fit <- c(rep(0, 24), lm_HEL_ARN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_HEL_ARN2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



#Spojeni 3. Evropa -

USA letiště Frankfurt -> letiště Chicago O'Hare

```
data$FRA_ORD_30 <- data$FRA_ORD/data$days * 30
plot(data$FRA_ORD_30~data$t, t="l")
```



```
lm_FRA_ORD1 <- glm(data$FRA_ORD_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_FRA_ORD1)
```

```
##
## Call:
## glm(formula = data$FRA_ORD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -27488.0 -11082.4   -13.7   11615.1   30554.1
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   73225.67    2672.69  27.398 < 2e-16 ***
## data$t        -102.11     17.02  -6.000 7.94e-09 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER  -6072.12    4378.72  -1.387  0.1669
## data$X2003_SARS -12815.15   5068.92  -2.528  0.0122 *
## data$X2008_FC    903.58    3335.36  0.271  0.7867
## data$X2009_SF    6504.49   3904.89  1.666  0.0972 .
## data$X2010_ER    6179.49   7080.68  0.873  0.3838
## data$X2019_CV  -28890.77   3891.04  -7.425 2.39e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 177361651)
##
##      Null deviance: 7.2869e+10  on 229  degrees of freedom
## Residual deviance: 3.9374e+10  on 222  degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 5031.1
##
## Number of Fisher Scoring iterations: 2

lm_FRA_ORD2 <- glm(data$FRA_ORD_30~data$t+data$X2003_SARS+data$X2009_SF+data$
X2019_CV)
summary(lm_FRA_ORD2)

##
## Call:
## glm(formula = data$FRA_ORD_30 ~ data$t + data$X2003_SARS + data$X2009_SF +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -27316.1  -10617.7   -281.9   11313.1   30608.7
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    71825.36    2325.89  30.881 < 2e-16 ***
## data$t         -93.70      15.47  -6.056 5.80e-09 ***
## data$X2003_SARS -13256.81    5039.75  -2.630 0.00912 **
## data$X2009_SF   8816.63    3295.18   2.676 0.00801 **
## data$X2019_CV -29564.53    3861.31  -7.657 5.59e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 177219219)
##
##      Null deviance: 7.2869e+10  on 229  degrees of freedom
## Residual deviance: 3.9874e+10  on 225  degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 5028
##
## Number of Fisher Scoring iterations: 2

lm_FRA_ORD3 <- lm(data$FRA_ORD_30~data$t+data$X2003_SARS+data$X2009_SF+data$X
2019_CV)
summary(lm_FRA_ORD3)

##
## Call:
## lm(formula = data$FRA_ORD_30 ~ data$t + data$X2003_SARS + data$X2009_SF +
##      data$X2019_CV)
##

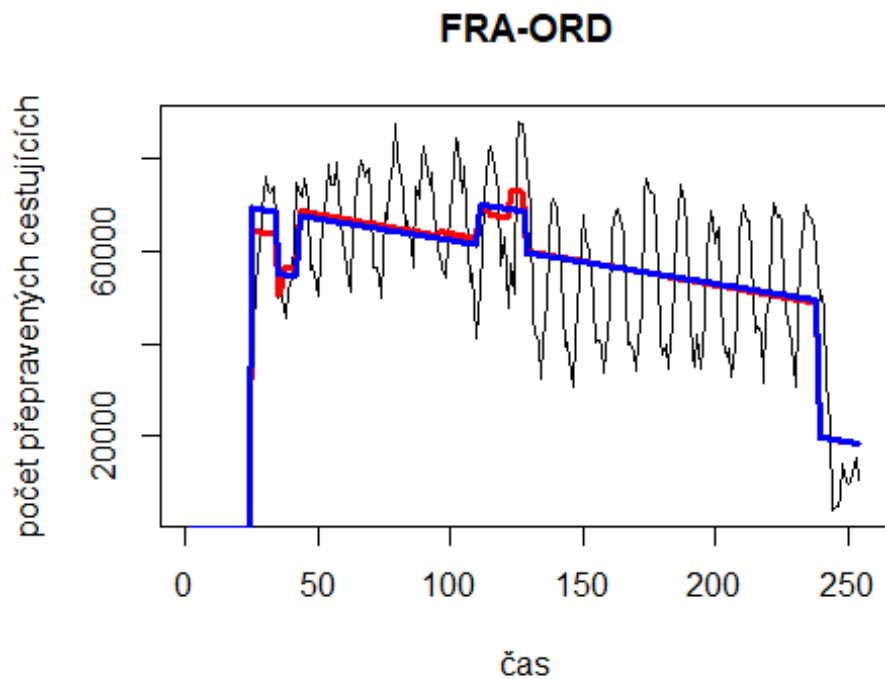
```

```

## Residuals:
##      Min       1Q   Median       3Q      Max
## -27316.1 -10617.7  -281.9  11313.1  30608.7
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    71825.36   2325.89   30.881 < 2e-16 ***
## data$t         -93.70     15.47   -6.056 5.80e-09 ***
## data$X2003_SARS -13256.81   5039.75  -2.630 0.00912 **
## data$X2009_SF    8816.63   3295.18   2.676 0.00801 **
## data$X2019_CV  -29564.53   3861.31  -7.657 5.59e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 13310 on 225 degrees of freedom
## (26 observations deleted due to missingness)
## Multiple R-squared:  0.4528, Adjusted R-squared:  0.4431
## F-statistic: 46.55 on 4 and 225 DF,  p-value: < 2.2e-16

plot(data$FRA_ORD_30, type="l",xlab="čas",ylab="počet přepravených cestujících",
      main="FRA-ORD")
fit <- c(rep(0, 24), lm_FRA_ORD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_FRA_ORD2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

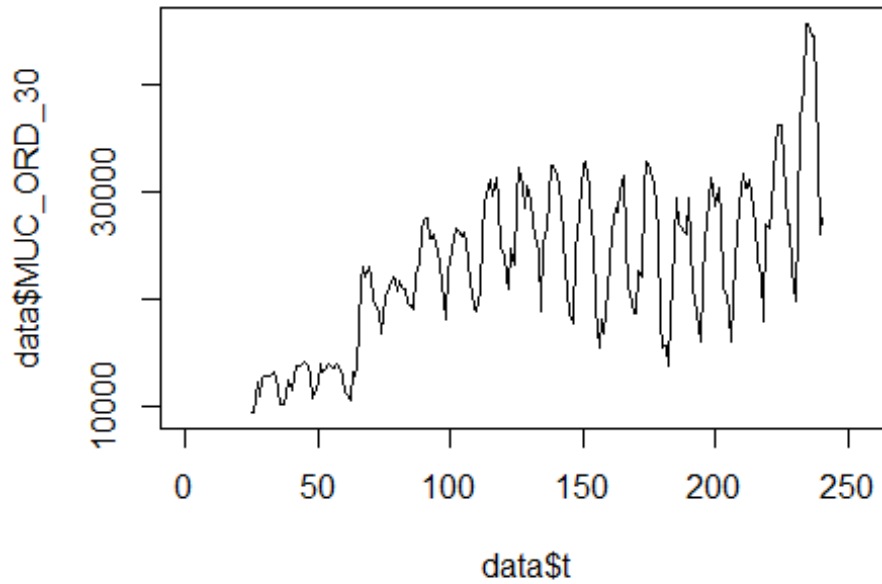


Spojeni 7. Evropa

- USA letiště Munchen -> letiště Chicago O'Hare


```
data$MUC_ORD_30 <- data$MUC_ORD/data$days * 30
```

```
plot(data$MUC_ORD_30~data$t, t="l")
```



```
lm_MUC_ORD1 <- glm(data$MUC_ORD_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MUC_ORD1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$MUC_ORD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
## -12852.0  -3351.5    338.8   3278.1  15026.0
```

```
##
```

```
## Coefficients: (1 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  12654.760   1053.112  12.017  <2e-16 ***
## data$t       77.232      6.706   11.517  <2e-16 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER  -2691.361   1724.998  -1.560  0.1202
## data$X2003_SARS -3209.363   1996.859  -1.607  0.1095
## data$X2008_FC   2093.432   1313.925  1.593  0.1126
## data$X2009_SF   4406.777   1538.269  2.865  0.0046 **
```

```

## data$X2010_ER      1353.550   2789.319   0.485   0.6280
## data$X2019_CV     -4229.277   3785.443  -1.117   0.2652
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 27523627)
##
##      Null deviance: 1.1939e+10  on 215  degrees of freedom
## Residual deviance: 5.7249e+09  on 208  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4323
##
## Number of Fisher Scoring iterations: 2

lm_MUC_ORD2 <- glm(data$MUC_ORD_30~data$t+data$X2009_SF)
summary(lm_MUC_ORD2)

##
## Call:
## glm(formula = data$MUC_ORD_30 ~ data$t + data$X2009_SF)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -12900.2  -3665.1   -209.9    3656.7   14735.6
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  11855.163    864.034  13.721 < 2e-16 ***
## data$t        81.890      5.813   14.088 < 2e-16 ***
## data$X2009_SF 5490.939   1311.363   4.187 4.13e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 28262460)
##
##      Null deviance: 1.1939e+10  on 215  degrees of freedom
## Residual deviance: 6.0199e+09  on 213  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4323.9
##
## Number of Fisher Scoring iterations: 2

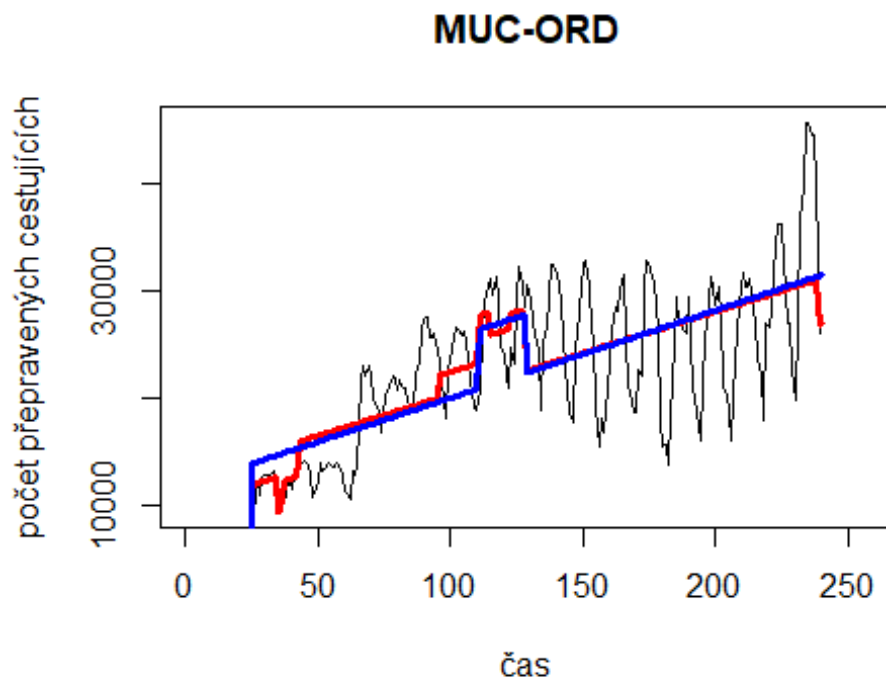
lm_MUC_ORD3 <- lm(data$MUC_ORD_30~data$t+data$X2009_SF)
summary(lm_MUC_ORD3)

##
## Call:
## lm(formula = data$MUC_ORD_30 ~ data$t + data$X2009_SF)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

```
## -12900.2 -3665.1 -209.9 3656.7 14735.6
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 11855.163 864.034 13.721 < 2e-16 ***
## data$t 81.890 5.813 14.088 < 2e-16 ***
## data$X2009_SF 5490.939 1311.363 4.187 4.13e-05 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 5316 on 213 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared: 0.4958, Adjusted R-squared: 0.491
## F-statistic: 104.7 on 2 and 213 DF, p-value: < 2.2e-16

plot(data$MUC_ORD_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="MUC-ORD")
fit <- c(rep(0, 24), lm_MUC_ORD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_MUC_ORD2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

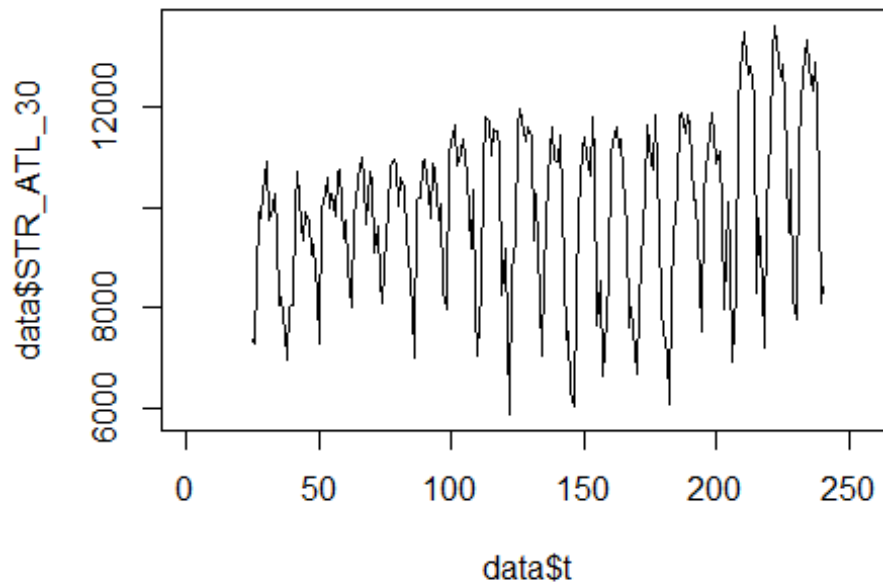


Spojení letiště

Stuttgart -> letiště Atlanta

```
data$STR_ATL_30 <- data$STR_ATL/data$days * 30
```

```
plot(data$STR_ATL_30~data$t, t="l")
```



```
lm_STR_ATL1 <- glm(data$STR_ATL_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_STR_ATL1)
```

```
##
## Call:
## glm(formula = data$STR_ATL_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -4238.9  -990.4   398.0  1217.8  3029.6
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9040.341    327.827  27.577 < 2e-16 ***
## data$t         7.068       2.087   3.386 0.000848 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER   174.930    536.980   0.326 0.744929
## data$X2003_SARS -909.199    621.609  -1.463 0.145071
## data$X2008_FC   346.089    409.016   0.846 0.398440
## data$X2009_SF    41.036    478.853   0.086 0.931789
## data$X2010_ER   686.432    868.296   0.791 0.430107
## data$X2019_CV -2478.801    1178.383  -2.104 0.036618 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 2667135)
##
## Null deviance: 616490190 on 215 degrees of freedom
## Residual deviance: 554764019 on 208 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3818.9
##
## Number of Fisher Scoring iterations: 2

lm_STR_ATL2 <- glm(data$STR_ATL_30~data$t+data$X2019_CV)
summary(lm_STR_ATL2)

##
## Call:
## glm(formula = data$STR_ATL_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -4280.9 -1181.2 424.1 1234.1 2974.8
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 9024.675 262.058 34.438 < 2e-16 ***
## data$t 7.385 1.804 4.094 6.01e-05 ***
## data$X2019_CV -2539.090 1174.248 -2.162 0.0317 *
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 2656987)
##
## Null deviance: 616490190 on 215 degrees of freedom
## Residual deviance: 565938299 on 213 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3813.2
##
## Number of Fisher Scoring iterations: 2

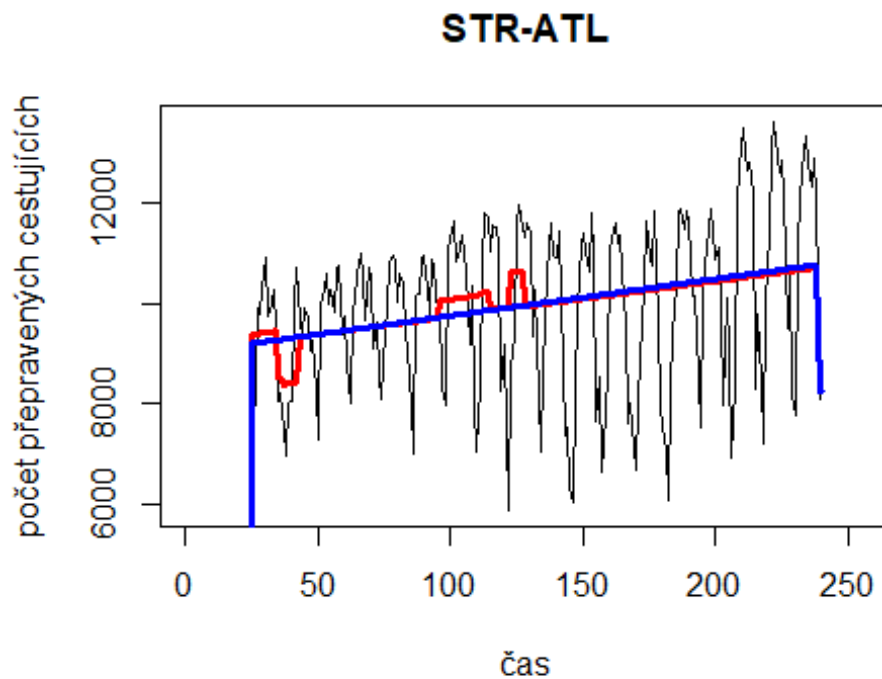
lm_STR_ATL3 <- lm(data$STR_ATL_30~data$t+data$X2019_CV)
summary(lm_STR_ATL3)

##
## Call:
## lm(formula = data$STR_ATL_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -4280.9 -1181.2 424.1 1234.1 2974.8
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)

```

```
## (Intercept)    9024.675    262.058    34.438 < 2e-16 ***
## data$t         7.385      1.804     4.094 6.01e-05 ***
## data$X2019_CV -2539.090   1174.248   -2.162  0.0317 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1630 on 213 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.082, Adjusted R-squared:  0.07338
## F-statistic: 9.513 on 2 and 213 DF,  p-value: 0.0001103

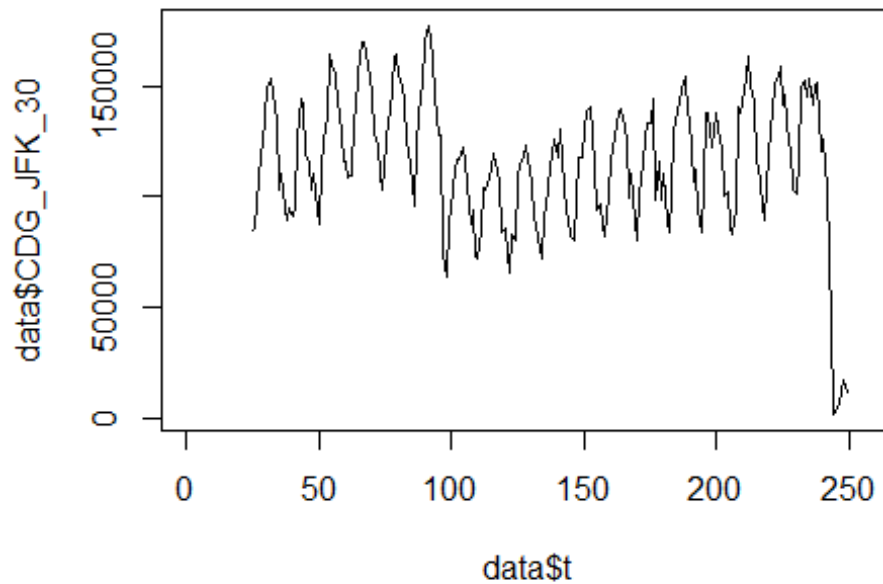
plot(data$STR_ATL_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "STR-ATL")
fit <- c(rep(0, 24), lm_STR_ATL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_STR_ATL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Charles de Gaulle -> letiště John F. Kennedy

```
data$CDG_JFK_30 <- data$CDG_JFK/data$days * 30
plot(data$CDG_JFK_30~data$t, t="l")
```



```
lm_CDG_JFK1 <- glm(data$CDG_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_CDG_JFK1)
```

```
##
## Call:
## glm(formula = data$CDG_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -51772  -19094    1905   17953   75097
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  129859.73    5140.98  25.260 < 2e-16 ***
## data$t       -42.29      32.74  -1.292  0.197742
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER  -2145.69    8421.46  -0.255  0.799128
## data$X2003_SARS -26863.68    9748.75  -2.756  0.006356 **
## data$X2008_FC  -23211.87    6414.66  -3.619  0.000369 ***
## data$X2009_SF  -18899.67    7509.95  -2.517  0.012572 *
## data$X2010_ER   -4661.69   13617.67  -0.342  0.732436
## data$X2019_CV  -68490.64    8608.31  -7.956  9.73e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 656016584)
##
## Null deviance: 2.1158e+11 on 224 degrees of freedom
## Residual deviance: 1.4236e+11 on 217 degrees of freedom
## (31 observations deleted due to missingness)
## AIC: 5216.3
##
## Number of Fisher Scoring iterations: 2

lm_CDG_JFK2 <- glm(data$CDG_JFK_30~data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_CDG_JFK2)

##
## Call:
## glm(formula = data$CDG_JFK_30 ~ data$X2003_SARS + data$X2008_FC +
## data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -51409 -20416 391 17736 75266
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 123829 1928 64.229 < 2e-16 ***
## data$X2003_SARS -22998 9235 -2.490 0.013507 *
## data$X2008_FC -21474 6212 -3.457 0.000655 ***
## data$X2009_SF -19605 6365 -3.080 0.002332 **
## data$X2019_CV -72780 7940 -9.166 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 652603046)
##
## Null deviance: 2.1158e+11 on 224 degrees of freedom
## Residual deviance: 1.4357e+11 on 220 degrees of freedom
## (31 observations deleted due to missingness)
## AIC: 5212.2
##
## Number of Fisher Scoring iterations: 2

lm_CDG_JFK3 <- lm(data$CDG_JFK_30~data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_CDG_JFK3)

##
## Call:
## lm(formula = data$CDG_JFK_30 ~ data$X2003_SARS + data$X2008_FC +
## data$X2009_SF + data$X2019_CV)
##

```

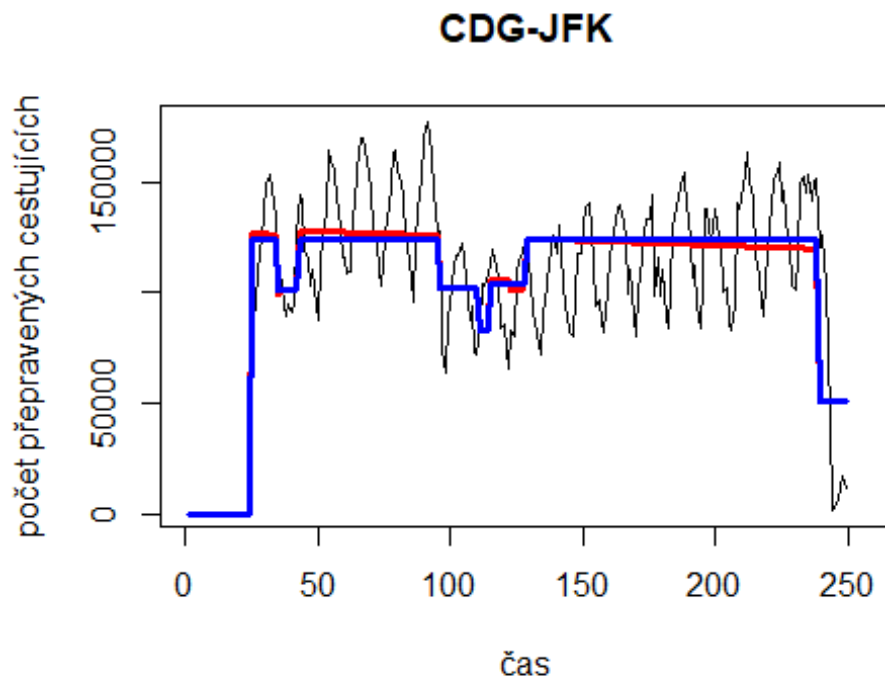


```

## Residuals:
##   Min     1Q Median     3Q      Max
## -51409 -20416   391  17736  75266
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    123829      1928   64.229 < 2e-16 ***
## data$X2003_SARS -22998      9235   -2.490  0.013507 *
## data$X2008_FC   -21474      6212   -3.457  0.000655 ***
## data$X2009_SF   -19605      6365   -3.080  0.002332 **
## data$X2019_CV   -72780      7940   -9.166 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 25550 on 220 degrees of freedom
## (31 observations deleted due to missingness)
## Multiple R-squared:  0.3214, Adjusted R-squared:  0.3091
## F-statistic: 26.05 on 4 and 220 DF,  p-value: < 2.2e-16

plot(data$CDG_JFK_30, type="l",xlab="čas",ylab="počet přepravených cestujících h",main="CDG-JFK")
fit <- c(rep(0, 24), lm_CDG_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CDG_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

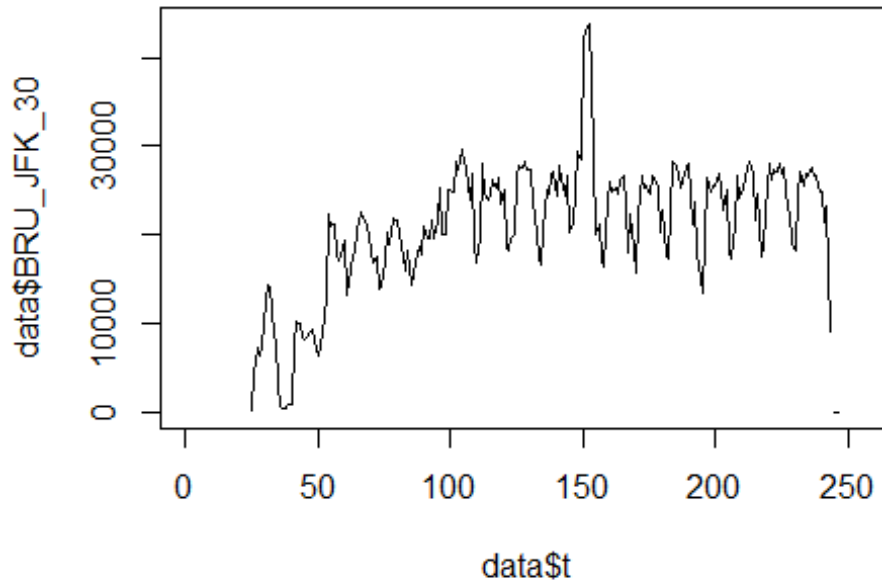


Brusel -> letiště John F. Kennedy

Spojení letiště

```
data$BRU_JFK_30 <- data$BRU_JFK/data$days * 30
```

```
plot(data$BRU_JFK_30~data$t, t="l")
```



```
lm_BRU_JFK1 <- glm(data$BRU_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_BRU_JFK1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$BRU_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
## -15019.5  -3497.3    538.8   2780.6  21457.6
```

```
##
```

```
## Coefficients: (1 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  13743.097   1042.440   13.184 < 2e-16 ***
## data$t       56.600     6.638    8.527 2.79e-15 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER  -6290.565   1707.556   -3.684 0.000291 ***
## data$X2003_SARS -11326.383   1976.673   -5.730 3.40e-08 ***
## data$X2008_FC   4262.550   1300.644    3.277 0.001224 **
## data$X2009_SF   2321.410   1522.723    1.525 0.128864
```

```

## data$X2010_ER      1148.566   2761.129    0.416 0.677846
## data$X2019_CV     -12645.225   2105.414   -6.006 8.12e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 26970105)
##
##      Null deviance: 1.2469e+10  on 220  degrees of freedom
## Residual deviance: 5.7446e+09  on 213  degrees of freedom
## (35 observations deleted due to missingness)
## AIC: 4418.4
##
## Number of Fisher Scoring iterations: 2

lm_BRU_JFK2 <- glm(data$BRU_JFK_30~data$t+data$X2001_TER+data$X2003_SARS+data
$X2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_BRU_JFK2)

##
## Call:
## glm(formula = data$BRU_JFK_30 ~ data$t + data$X2001_TER + data$X2003_SARS
+
##      data$X2008_FC + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min        1Q      Median        3Q        Max
## -15019.4   -3435.1     506.4     2860.7    21451.4
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   13752.893   1040.159   13.222 < 2e-16 ***
## data$t         56.576     6.625    8.540 2.51e-15 ***
## data$X2001_TER -6298.483   1704.148   -3.696 0.000278 ***
## data$X2003_SARS -11333.279   1972.781   -5.745 3.14e-08 ***
## data$X2008_FC  4185.975   1285.061    3.257 0.001307 **
## data$X2009_SF  2650.533   1298.514    2.041 0.042458 *
## data$X2019_CV -12649.230   2101.320   -6.020 7.51e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 26865884)
##
##      Null deviance: 1.2469e+10  on 220  degrees of freedom
## Residual deviance: 5.7493e+09  on 214  degrees of freedom
## (35 observations deleted due to missingness)
## AIC: 4416.6
##
## Number of Fisher Scoring iterations: 2

```

```

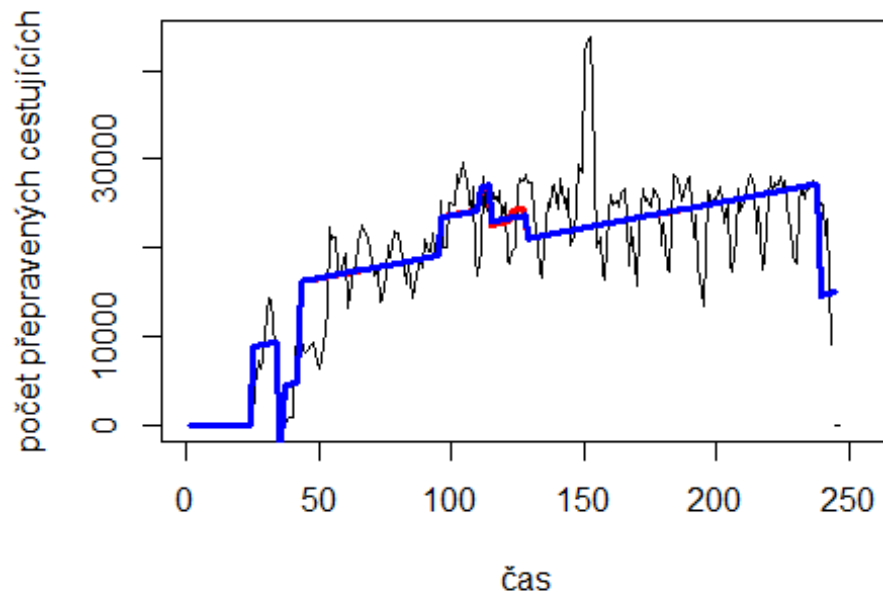
lm_BRU_JFK3 <- lm(data$BRU_JFK_30~data$t+data$X2001_TER+data$X2003_SARS+data$
X2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_BRU_JFK3)

##
## Call:
## lm(formula = data$BRU_JFK_30 ~ data$t + data$X2001_TER + data$X2003_SARS +
##     data$X2008_FC + data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -15019.4  -3435.1    506.4   2860.7  21451.4
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   13752.893   1040.159   13.222 < 2e-16 ***
## data$t         56.576     6.625    8.540 2.51e-15 ***
## data$X2001_TER -6298.483   1704.148  -3.696 0.000278 ***
## data$X2003_SARS -11333.279   1972.781  -5.745 3.14e-08 ***
## data$X2008_FC  4185.975   1285.061   3.257 0.001307 **
## data$X2009_SF  2650.533   1298.514   2.041 0.042458 *
## data$X2019_CV -12649.230   2101.320  -6.020 7.51e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 5183 on 214 degrees of freedom
## (35 observations deleted due to missingness)
## Multiple R-squared:  0.5389, Adjusted R-squared:  0.526
## F-statistic: 41.69 on 6 and 214 DF,  p-value: < 2.2e-16

plot(data$BRU_JFK_30, type="l",xlab ="čas",ylab ="počet přepravených cestujíc
ích", main = "BRU-JFK")
fit <- c(rep(0, 24), lm_BRU_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_BRU_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

BRU-JFK

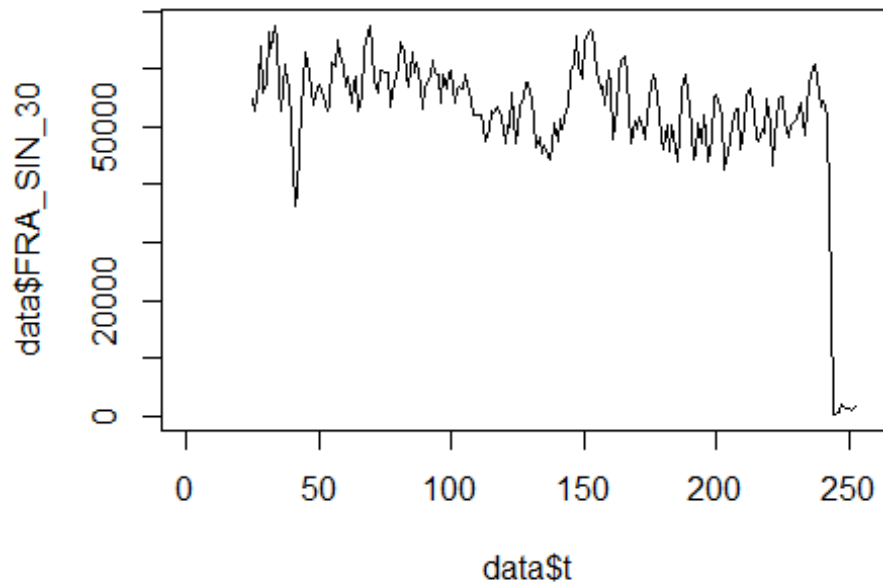


Spojení letiště

Frankfurt -> letiště Singapur

```
data$FRA_SIN_30 <- data$FRA_SIN/data$days * 30
```

```
plot(data$FRA_SIN_30~data$t, t="l")
```



```
lm_FRA_SIN1 <- glm(data$FRA_SIN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_FRA_SIN1)
```

```
##
## Call:
## glm(formula = data$FRA_SIN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -17206   -3775    -46     3402    36817
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   61030.96   1694.10   36.026 < 2e-16 ***
## data$t        -44.39     10.58   -4.197 3.95e-05 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER   1418.90   2561.95    0.554 0.58026
## data$X2003_SARS -9291.94   2934.01   -3.167 0.00176 **
## data$X2005_FLU   1116.93   2449.57    0.456 0.64887
## data$X2008_FC   -743.55   1933.37   -0.385 0.70092
## data$X2009_SF  -4261.79   2245.79   -1.898 0.05907 .
## data$X2010_ER    959.82   4050.75    0.237 0.81292
## data$X2012_MERS -1863.61   2804.06   -0.665 0.50701
```

```

## data$X2013_FLU      2171.84      2500.93      0.868      0.38613
## data$X2019_CV      -32616.23      2374.06     -13.739      < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 58025741)
##
##      Null deviance: 3.2815e+10  on 227  degrees of freedom
## Residual deviance: 1.2592e+10  on 217  degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4735.6
##
## Number of Fisher Scoring iterations: 2

lm_FRA_SIN2 <- glm(data$FRA_SIN_30~data$t+data$X2003_SARS+data$X2009_SF+data$
X2019_CV)
summary(lm_FRA_SIN2)

##
## Call:
## glm(formula = data$FRA_SIN_30 ~ data$t + data$X2003_SARS + data$X2009_SF +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -17211   -4151    -69     3548    36800
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    61567.173   1319.109   46.673 < 2e-16 ***
## data$t         -47.411     8.775   -5.403 1.68e-07 ***
## data$X2003_SARS -9357.152   2858.090   -3.274 0.00123 **
## data$X2009_SF  -4335.732   1868.718   -2.320 0.02124 *
## data$X2019_CV -32411.037   2299.411  -14.095 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 56995342)
##
##      Null deviance: 3.2815e+10  on 227  degrees of freedom
## Residual deviance: 1.2710e+10  on 223  degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4725.7
##
## Number of Fisher Scoring iterations: 2

lm_FRA_SIN2 <- lm(data$FRA_SIN_30~data$t+data$X2003_SARS+data$X2009_SF+data$X
2019_CV)
summary(lm_FRA_SIN2)

```

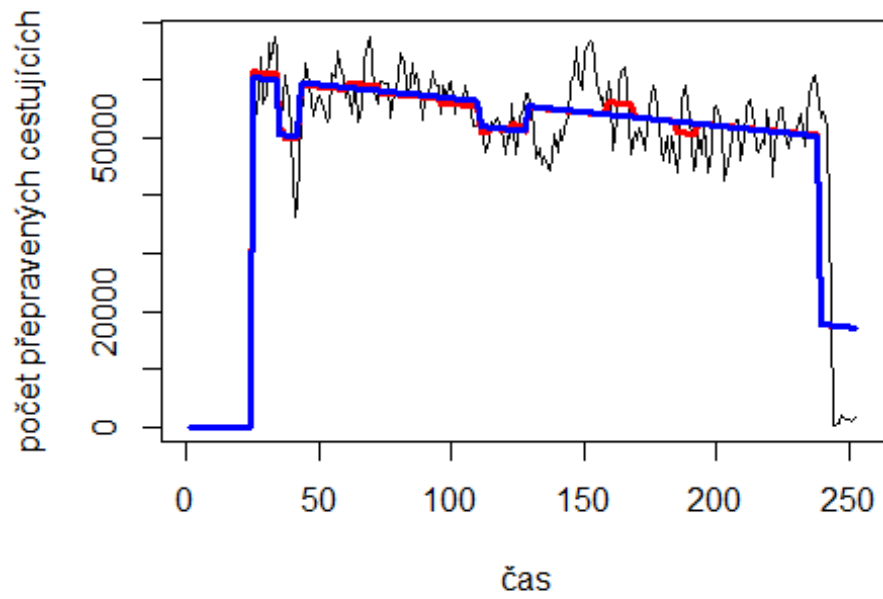
```

##
## Call:
## lm(formula = data$FRA_SIN_30 ~ data$t + data$X2003_SARS + data$X2009_SF +
##     data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -17211  -4151    -69    3548   36800
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   61567.173   1319.109   46.673 < 2e-16 ***
## data$t        -47.411     8.775   -5.403 1.68e-07 ***
## data$X2003_SARS -9357.152   2858.090   -3.274 0.00123 **
## data$X2009_SF  -4335.732   1868.718   -2.320 0.02124 *
## data$X2019_CV -32411.037   2299.411  -14.095 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7550 on 223 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.6127, Adjusted R-squared:  0.6057
## F-statistic: 88.19 on 4 and 223 DF,  p-value: < 2.2e-16

plot(data$FRA_SIN_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "FRA-SIN")
fit <- c(rep(0, 24), lm_FRA_SIN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_FRA_SIN2$fitted.values)
lines(fit2, col="blue", lwd=3)

```


FRA-SIN

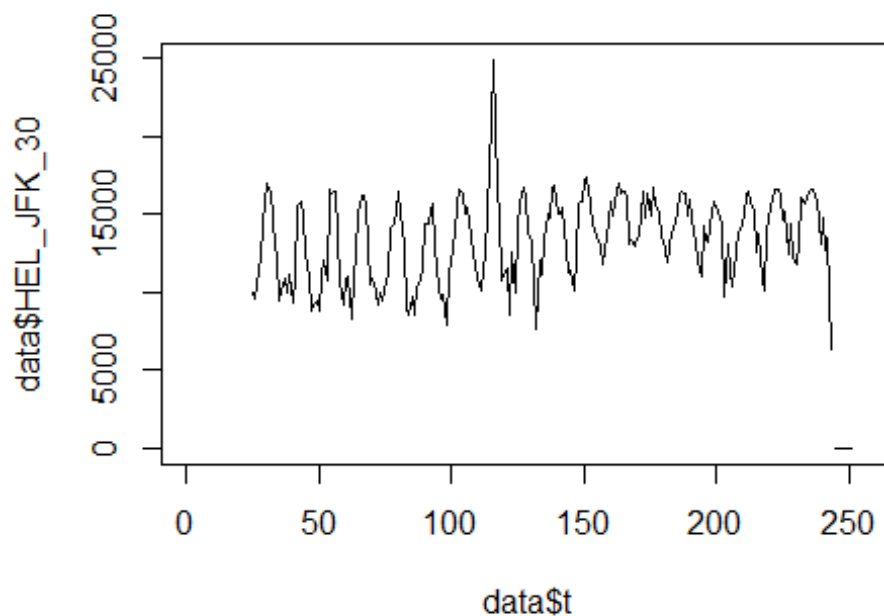


Spojení letiště

Helsinki -> letiště John F. Kennedy

```
data$HEL_JFK_30 <- data$HEL_JFK/data$days * 30
```

```
plot(data$HEL_JFK_30~data$t, t="l")
```



```
lm_HEL_JFK1 <- glm(data$HEL_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_HEL_JFK1)
```

```
##
## Call:
## glm(formula = data$HEL_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -6058.6  -1967.3   -80.7    1727.1  10338.8
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   11507.325    569.881   20.193 < 2e-16 ***
## data$t         14.569       3.629    4.015 8.18e-05 ***
## data$X2001_FC          NA          NA          NA      NA
## data$X2001_TER    993.565    933.561    1.064  0.2884
## data$X2003_SARS -1386.363   1080.703   -1.283  0.2009
## data$X2008_FC   -480.512    711.102   -0.676  0.4999
## data$X2009_SF   1387.107    832.522    1.666  0.0971 .
## data$X2010_ER   -831.499   1509.600   -0.551  0.5823
## data$X2019_CV -10041.929    923.260  -10.877 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 8061825)
##
## Null deviance: 2782016442 on 225 degrees of freedom
## Residual deviance: 1757477821 on 218 degrees of freedom
## (30 observations deleted due to missingness)
## AIC: 4245.2
##
## Number of Fisher Scoring iterations: 2

lm_HEL_JFK2 <- glm(data$HEL_JFK_30~data$t+data$X2019_CV)
summary(lm_HEL_JFK2)

##
## Call:
## glm(formula = data$HEL_JFK_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -5793.3 -2000.5 -169.2 1805.9 11663.6
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 11598.539 457.227 25.37 < 2e-16 ***
## data$t 14.320 3.147 4.55 8.8e-06 ***
## data$X2019_CV -10072.117 916.361 -10.99 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 8089771)
##
## Null deviance: 2.782e+09 on 225 degrees of freedom
## Residual deviance: 1.804e+09 on 223 degrees of freedom
## (30 observations deleted due to missingness)
## AIC: 4241.1
##
## Number of Fisher Scoring iterations: 2

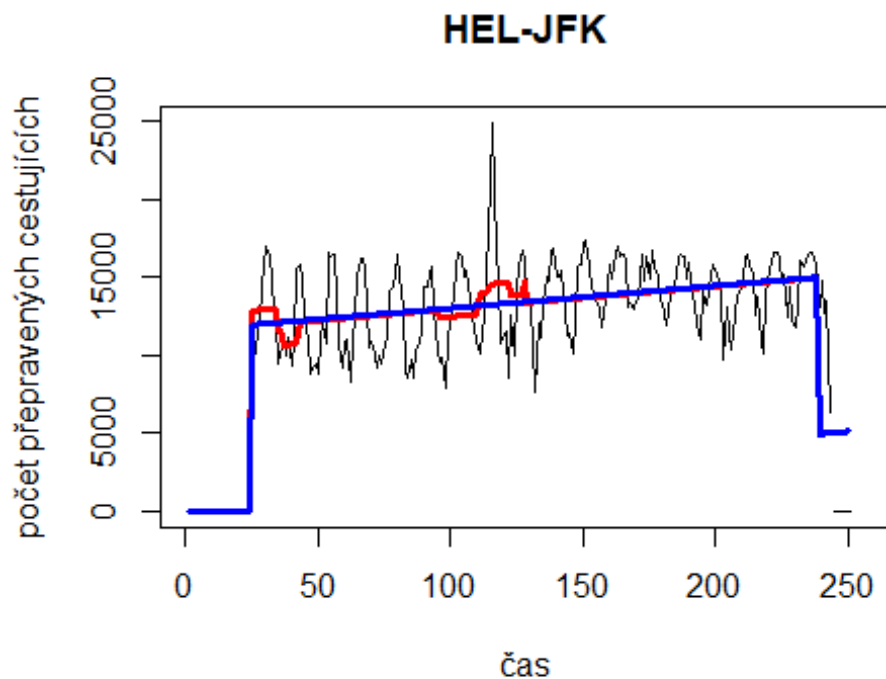
lm_HEL_JFK3 <- glm(data$HEL_JFK_30~data$t+data$X2019_CV)
summary(lm_HEL_JFK3)

##
## Call:
## glm(formula = data$HEL_JFK_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -5793.3 -2000.5 -169.2 1805.9 11663.6
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)

```

```
## (Intercept)    11598.539    457.227    25.37 < 2e-16 ***
## data$t         14.320      3.147     4.55 8.8e-06 ***
## data$X2019_CV -10072.117    916.361   -10.99 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 8089771)
##
## Null deviance: 2.782e+09 on 225 degrees of freedom
## Residual deviance: 1.804e+09 on 223 degrees of freedom
## (30 observations deleted due to missingness)
## AIC: 4241.1
##
## Number of Fisher Scoring iterations: 2

plot(data$HEL_JFK_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
      main = "HEL-JFK")
fit <- c(rep(0, 24), lm_HEL_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_HEL_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

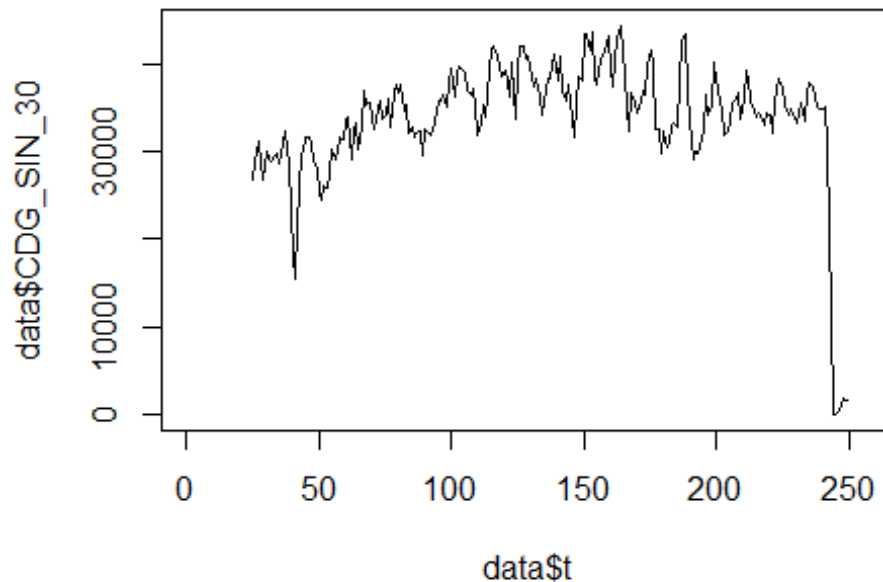


Spojení letiště

Charles de Gaulle -> letiště Singapur

```
data$CDG_SIN_30 <- data$CDG_SIN/data$days * 30
```

```
plot(data$CDG_SIN_30~data$t, t="l")
```



```
lm_CDG_SIN1 <- glm(data$CDG_SIN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_CDG_SIN1)
```

```
##
## Call:
## glm(formula = data$CDG_SIN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -13818.4  -2472.1   -304.5   2582.8  21284.2
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  31442.902   1106.508   28.416 < 2e-16 ***
## data$t       23.145      6.908    3.350 0.000954 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER  -2125.159   1673.225   -1.270 0.205429
## data$X2003_SARS -6247.640   1916.199   -3.260 0.001294 **
## data$X2005_FLU   445.513   1599.817    0.278 0.780915
## data$X2008_FC   2068.446   1262.671    1.638 0.102860
## data$X2009_SF   3616.596   1466.707    2.466 0.014457 *
## data$X2010_ER   1470.545   2645.514    0.556 0.578885
## data$X2012_MERS -102.679   1831.314   -0.056 0.955340
```

```

## data$X2013_FLU      4157.165    1633.336    2.545 0.011626 *
## data$X2019_CV     -23294.987    1694.803   -13.745 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 24749634)
##
##      Null deviance: 1.1676e+10  on 224  degrees of freedom
## Residual deviance: 5.2964e+09  on 214  degrees of freedom
## (31 observations deleted due to missingness)
## AIC: 4481.7
##
## Number of Fisher Scoring iterations: 2

lm_CDG_SIN2 <- glm(data$CDG_SIN_30~data$t+data$X2003_SARS+data$X2009_SF+data$
X2013_FLU+data$X2019_CV)
summary(lm_CDG_SIN2)

##
## Call:
## glm(formula = data$CDG_SIN_30 ~ data$t + data$X2003_SARS + data$X2009_SF +
##      data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -13819.5   -2682.8    -375.2    2872.0   21287.6
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   31369.610     869.897  36.061 < 2e-16 ***
## data$t         24.282         5.817   4.175 4.31e-05 ***
## data$X2003_SARS -6749.420    1884.854  -3.581 0.000422 ***
## data$X2009_SF   4422.134    1234.599   3.582 0.000420 ***
## data$X2013_FLU  4044.528    1626.262   2.487 0.013629 *
## data$X2019_CV -23499.166    1671.351 -14.060 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 24782040)
##
##      Null deviance: 1.1676e+10  on 224  degrees of freedom
## Residual deviance: 5.4273e+09  on 219  degrees of freedom
## (31 observations deleted due to missingness)
## AIC: 4477.2
##
## Number of Fisher Scoring iterations: 2

lm_CDG_SIN3 <- lm(data$CDG_SIN_30~data$t+data$X2003_SARS+data$X2009_SF+data$X
2013_FLU+data$X2019_CV)
summary(lm_CDG_SIN3)

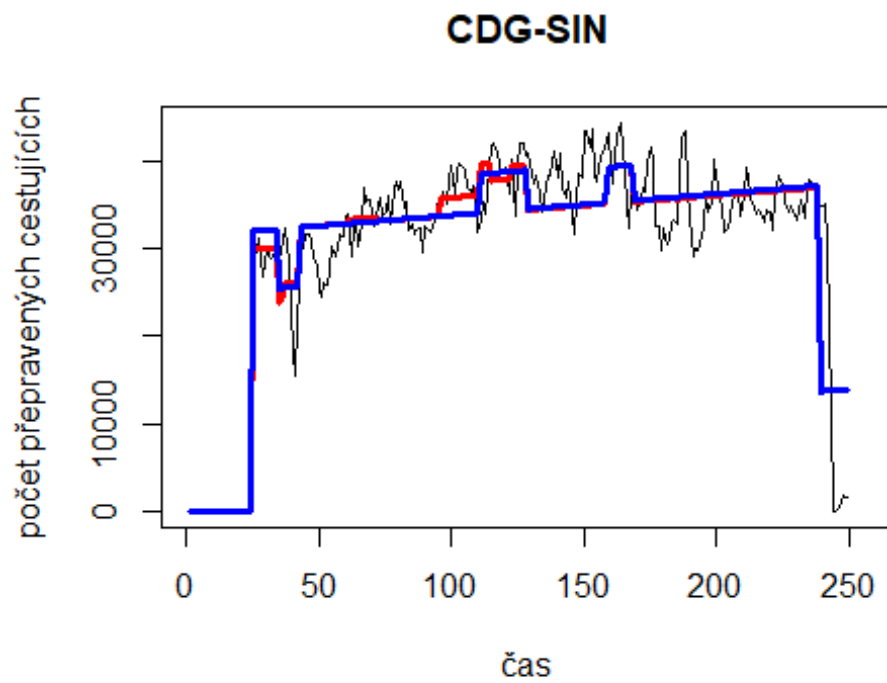
```

```

##
## Call:
## lm(formula = data$CDG_SIN_30 ~ data$t + data$X2003_SARS + data$X2009_SF +
##     data$X2013_FLU + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -13819.5  -2682.8   -375.2   2872.0  21287.6
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   31369.610     869.897   36.061 < 2e-16 ***
## data$t         24.282         5.817    4.175 4.31e-05 ***
## data$X2003_SARS -6749.420    1884.854   -3.581 0.000422 ***
## data$X2009_SF   4422.134    1234.599    3.582 0.000420 ***
## data$X2013_FLU  4044.528    1626.262    2.487 0.013629 *
## data$X2019_CV -23499.166    1671.351  -14.060 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4978 on 219 degrees of freedom
## (31 observations deleted due to missingness)
## Multiple R-squared:  0.5352, Adjusted R-squared:  0.5246
## F-statistic: 50.43 on 5 and 219 DF,  p-value: < 2.2e-16

plot(data$CDG_SIN_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "CDG-SIN")
fit <- c(rep(0, 24), lm_CDG_SIN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CDG_SIN2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

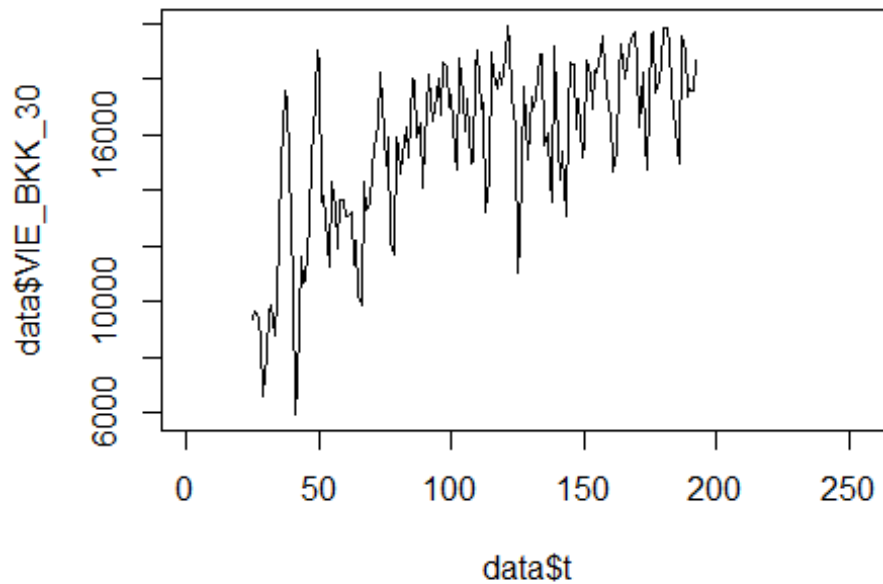


Spojení letiště

Vídeň -> letiště Bangkok

```
data$VIE_BKK_30 <- data$VIE_BKK/data$days * 30
```

```
plot(data$VIE_BKK_30~data$t, t="l")
```

```
lm_VIE_BKK1 <- glm(data$VIE_BKK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_VIE_BKK1)
```

```
##
## Call:
## glm(formula = data$VIE_BKK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -7591   -1264     192    1320    5070
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   12234.659    588.373   20.794 < 2e-16 ***
## data$t         34.840      4.802    7.256 1.69e-11 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER  -3496.828    740.821  -4.720 5.16e-06 ***
## data$X2003_SARS -128.774    827.223  -0.156 0.8765
## data$X2005_FLU -1423.744    686.153  -2.075 0.0396 *
## data$X2008_FC   584.802    536.335   1.090 0.2772
## data$X2009_SF   964.557    627.658   1.537 0.1264
## data$X2010_ER  -2659.043   1122.301  -2.369 0.0190 *
## data$X2012_MERS -1265.884    857.253  -1.477 0.1418
```

```

## data$X2013_FLU    -321.361    742.707   -0.433    0.6658
## data$X2019_CV      NA          NA        NA        NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 4449128)
##
##      Null deviance: 1596327024  on 167  degrees of freedom
## Residual deviance:  702962200  on 158  degrees of freedom
## (88 observations deleted due to missingness)
## AIC: 3060.2
##
## Number of Fisher Scoring iterations: 2

lm_VIE_BKK2 <- glm(data$VIE_BKK_30~data$t+data$X2001_TER+data$X2005_FLU)
summary(lm_VIE_BKK2)

##
## Call:
## glm(formula = data$VIE_BKK_30 ~ data$t + data$X2001_TER + data$X2005_FLU)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -8001.5  -1149.2   213.3   1436.7   4898.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  12660.899    506.108  25.016 < 2e-16 ***
## data$t        31.306       3.997   7.832 5.68e-13 ***
## data$X2001_TER -3836.726    732.824  -5.236 4.98e-07 ***
## data$X2005_FLU -1614.935    675.653  -2.390  0.018 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 4578145)
##
##      Null deviance: 1596327024  on 167  degrees of freedom
## Residual deviance:  750815739  on 164  degrees of freedom
## (88 observations deleted due to missingness)
## AIC: 3059.3
##
## Number of Fisher Scoring iterations: 2

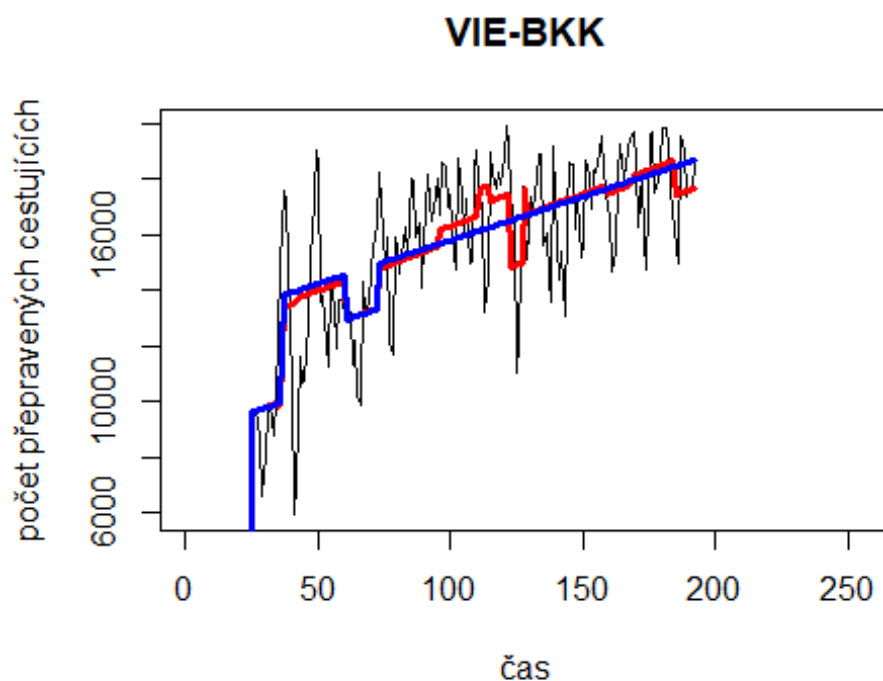
lm_VIE_BKK3 <- lm(data$VIE_BKK_30~data$t+data$X2001_TER+data$X2005_FLU)
summary(lm_VIE_BKK3)

##
## Call:
## lm(formula = data$VIE_BKK_30 ~ data$t + data$X2001_TER + data$X2005_FLU)
##
## Residuals:

```

```
##      Min      1Q  Median      3Q      Max
## -8001.5 -1149.2   213.3  1436.7  4898.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  12660.899    506.108   25.016 < 2e-16 ***
## data$t        31.306       3.997    7.832 5.68e-13 ***
## data$X2001_TER -3836.726    732.824  -5.236 4.98e-07 ***
## data$X2005_FLU -1614.935    675.653  -2.390  0.018 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2140 on 164 degrees of freedom
## (88 observations deleted due to missingness)
## Multiple R-squared:  0.5297, Adjusted R-squared:  0.5211
## F-statistic: 61.56 on 3 and 164 DF,  p-value: < 2.2e-16

plot(data$VIE_BKK_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
      main = "VIE-BKK")
fit <- c(rep(0, 24), lm_VIE_BKK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_VIE_BKK2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

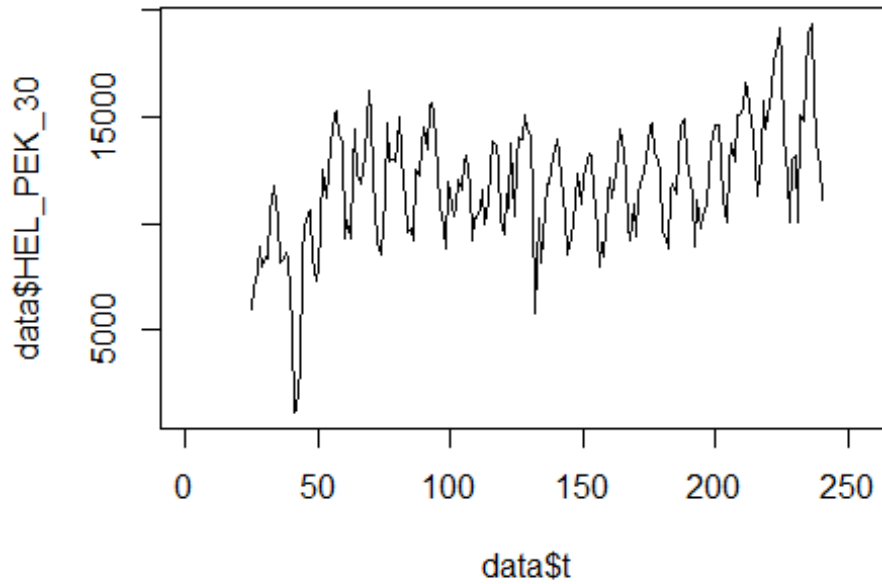


Helsinki -> letiště Peking

Spojení letiště

```
data$HEL_PEK_30 <- data$HEL_PEK/data$days * 30
```

```
plot(data$HEL_PEK_30~data$t, t="l")
```



```
lm_HEL_PEK1 <- glm(data$HEL_PEK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_HEL_PEK1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$HEL_PEK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
## -7227.9 -1461.2    71.4   1704.2   5298.6
```

```
##
```

```
## Coefficients: (1 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9458.435    522.873   18.089 < 2e-16 ***
## data$t         19.606      3.265    6.006 8.56e-09 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER   -617.181    790.615  -0.781  0.4359
## data$X2003_SARS -3668.604    905.414  -4.052 7.21e-05 ***
## data$X2005_FLU   1653.873    755.924   2.188  0.0298 *
```

```

## data$X2008_FC      -559.087    596.616  -0.937    0.3498
## data$X2009_SF      193.966    693.021   0.280    0.7798
## data$X2010_ER      891.985   1250.007   0.714    0.4763
## data$X2012_MERS   -654.351    865.299  -0.756    0.4504
## data$X2013_FLU    -742.108    771.753  -0.962    0.3374
## data$X2019_CV    -2264.904   1700.803  -1.332    0.1844
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 5525527)
##
## Null deviance: 1689321875  on 215  degrees of freedom
## Residual deviance: 1132732960  on 205  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3979.1
##
## Number of Fisher Scoring iterations: 2

lm_HEL_PEK2 <- glm(data$HEL_PEK_30~data$t+data$X2003_SARS+data$X2005_FLU)
summary(lm_HEL_PEK2)

##
## Call:
## glm(formula = data$HEL_PEK_30 ~ data$t + data$X2003_SARS + data$X2005_FLU)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -7088.2  -1523.5    27.3   1796.5   5425.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9315.707   426.149  21.860 < 2e-16 ***
## data$t         19.676     2.792   7.048 2.51e-11 ***
## data$X2003_SARS -3682.894   891.858  -4.129 5.23e-05 ***
## data$X2005_FLU  1791.898   726.790   2.465  0.0145 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 5491993)
##
## Null deviance: 1689321875  on 215  degrees of freedom
## Residual deviance: 1164302500  on 212  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3971
##
## Number of Fisher Scoring iterations: 2

lm_HEL_PEK3 <- lm(data$HEL_PEK_30~data$t+data$X2003_SARS+data$X2005_FLU)
summary(lm_HEL_PEK3)

```

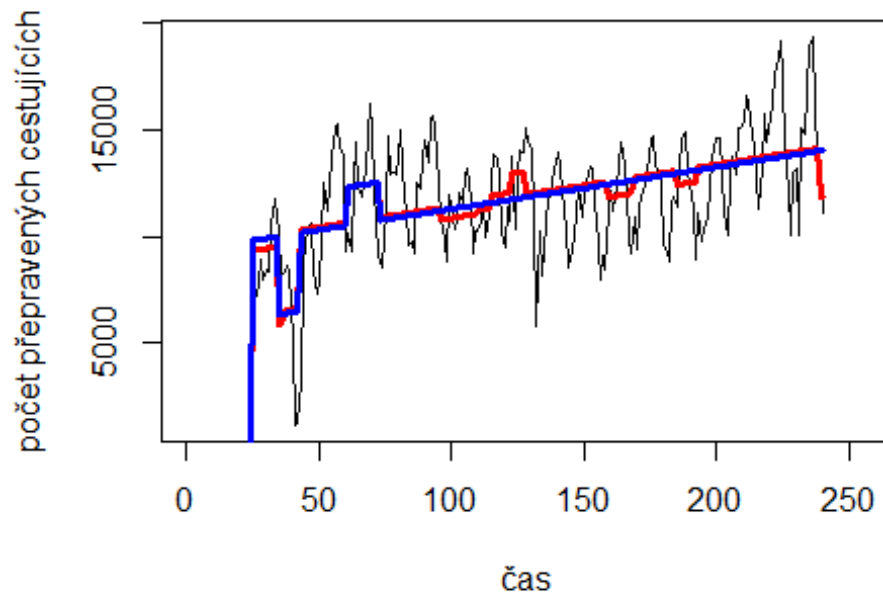
```

##
## Call:
## lm(formula = data$HEL_PEK_30 ~ data$t + data$X2003_SARS + data$X2005_FLU)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -7088.2 -1523.5    27.3  1796.5  5425.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9315.707   426.149  21.860 < 2e-16 ***
## data$t         19.676     2.792   7.048 2.51e-11 ***
## data$X2003_SARS -3682.894   891.858  -4.129 5.23e-05 ***
## data$X2005_FLU  1791.898   726.790   2.465  0.0145 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2344 on 212 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.3108, Adjusted R-squared:  0.301
## F-statistic: 31.87 on 3 and 212 DF,  p-value: < 2.2e-16

plot(data$HEL_PEK_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "HEL-PEK")
fit <- c(rep(0, 24), lm_HEL_PEK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_HEL_PEK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

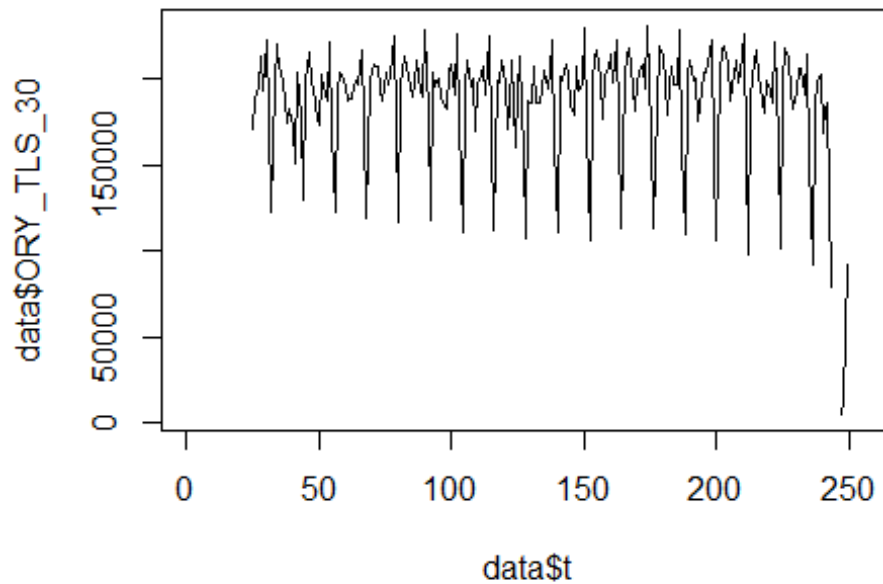
HEL-PEK



10. Spojení letiště Paris Orly Airport -> letiště Toulouse Blagnac Airport

```
data$ORY_TLS_30 <- data$ORY_TLS/data$days * 30
```

```
plot(data$ORY_TLS_30~data$t, t="l")
```



```
lm_ORY_TLS1 <- glm(data$ORY_TLS_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ORY_TLS1)
```

```
##
## Call:
## glm(formula = data$ORY_TLS_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -110784   -8223    7010    17897   86780
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  188678.088   6073.941   31.064 < 2e-16 ***
## data$t        6.943     39.179    0.177  0.860
## data$X2001_FC      NA         NA         NA     NA
## data$X2001_TER   4059.816  10469.620    0.388  0.699
## data$X2008_FC   5549.039   7945.371    0.698  0.486
## data$X2009_SF  -8649.500   9329.974   -0.927  0.355
## data$X2010_ER   6069.787  16938.906    0.358  0.720
## data$X2019_CV -74237.608  12192.383  -6.089 5.17e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1015104162)
```



```

##
## Null deviance: 2.6137e+11 on 221 degrees of freedom
## Residual deviance: 2.1825e+11 on 215 degrees of freedom
## (34 observations deleted due to missingness)
## AIC: 5242.8
##
## Number of Fisher Scoring iterations: 2

lm_ORY_TLS2 <- glm(data$ORY_TLS_30~data$X2019_CV)
summary(lm_ORY_TLS2)

##
## Call:
## glm(formula = data$ORY_TLS_30 ~ data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -110761 -7946 7026 17790 86748
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 189726 2160 87.847 < 2e-16 ***
## data$X2019_CV -73594 11377 -6.469 6.32e-10 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 998198567)
##
## Null deviance: 2.6137e+11 on 221 degrees of freedom
## Residual deviance: 2.1960e+11 on 220 degrees of freedom
## (34 observations deleted due to missingness)
## AIC: 5234.2
##
## Number of Fisher Scoring iterations: 2

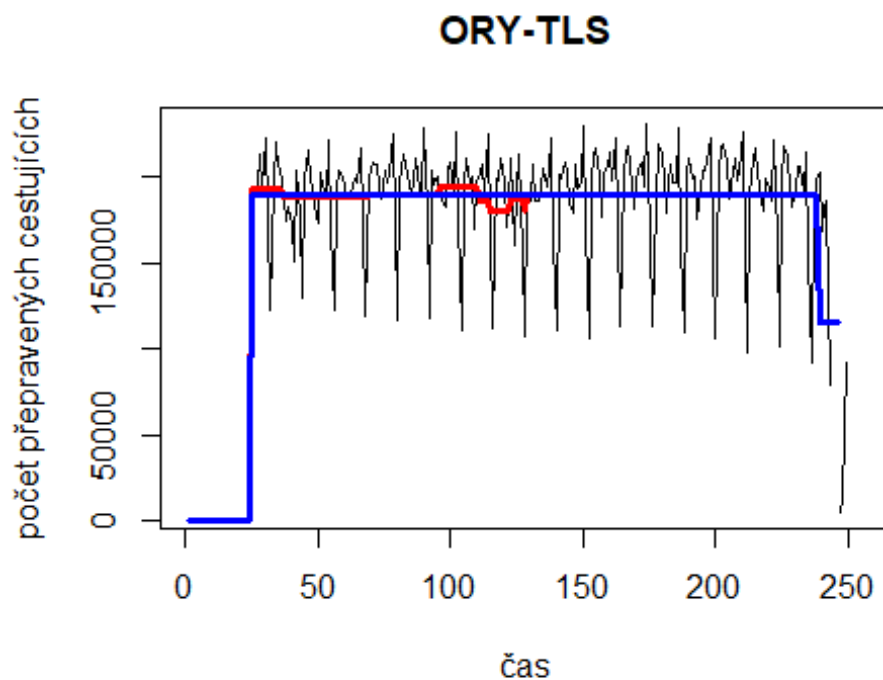
lm_ORY_TLS3 <- lm(data$ORY_TLS_30~data$X2019_CV)
summary(lm_ORY_TLS3)

##
## Call:
## lm(formula = data$ORY_TLS_30 ~ data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -110761 -7946 7026 17790 86748
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 189726 2160 87.847 < 2e-16 ***
## data$X2019_CV -73594 11377 -6.469 6.32e-10 ***
## ---

```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 31590 on 220 degrees of freedom
## (34 observations deleted due to missingness)
## Multiple R-squared:  0.1598, Adjusted R-squared:  0.156
## F-statistic: 41.84 on 1 and 220 DF,  p-value: 6.321e-10

plot(data$ORY_TLS_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="ORY-TLS")
fit <- c(rep(0, 24), lm_ORY_TLS1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_ORY_TLS2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

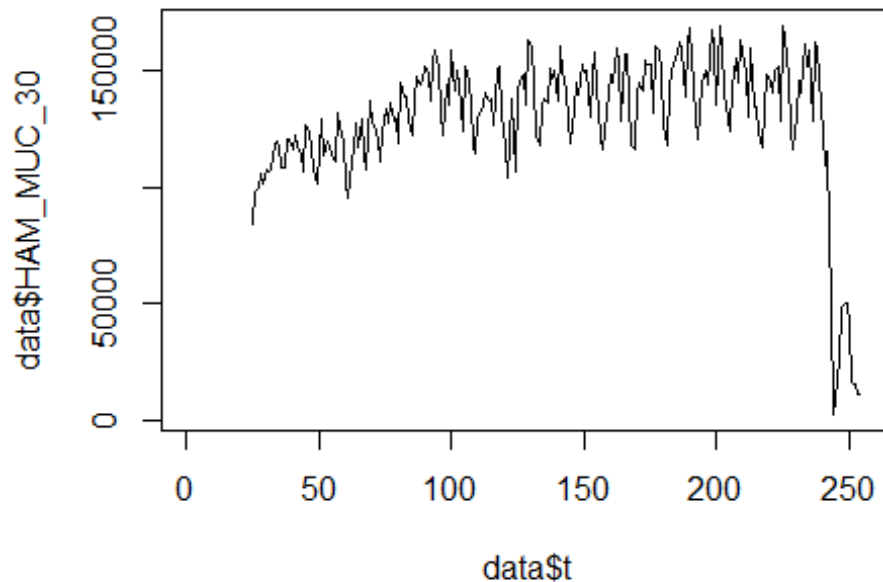


Spojení letiště

Hamburg -> letiště Munchen

```
data$HAM_MUC_30 <- data$HAM_MUC/data$days * 30
```

```
plot(data$HAM_MUC_30~data$t, t="l")
```



```
lm_HAM_MUC1 <- glm(data$HAM_MUC_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_HAM_MUC1)

##
## Call:
## glm(formula = data$HAM_MUC_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -47965  -10119    250    10465   85970
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   116613.26   3383.29  34.467 < 2e-16 ***
## data$t         147.16     21.82   6.743 1.31e-10 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER  -14641.92   5832.44  -2.510  0.0128 *
## data$X2008_FC    5394.40   4426.34   1.219  0.2242
## data$X2009_SF   -3192.08   5197.73  -0.614  0.5398
## data$X2010_ER    4336.71   9436.67   0.460  0.6463
## data$X2019_CV  -102161.29   5169.74 -19.761 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 315048205)
```

```

##
##      Null deviance: 2.0248e+11  on 229  degrees of freedom
## Residual deviance: 7.0256e+10  on 223  degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 5162.3
##
## Number of Fisher Scoring iterations: 2

lm_HAM_MUC2 <- glm(data$HAM_MUC_30~data$t+data$X2001_TER+data$X2019_CV)
summary(lm_HAM_MUC2)

##
## Call:
## glm(formula = data$HAM_MUC_30 ~ data$t + data$X2001_TER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -47974  -10078       10   10340   85942
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  117457.25   3188.24  36.841 < 2e-16 ***
## data$t       143.43     21.35   6.719 1.47e-10 ***
## data$X2001_TER -15371.97   5732.82  -2.681  0.00787 **
## data$X2019_CV -102084.36   5151.46 -19.817 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 313178180)
##
##      Null deviance: 2.0248e+11  on 229  degrees of freedom
## Residual deviance: 7.0778e+10  on 226  degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 5158
##
## Number of Fisher Scoring iterations: 2

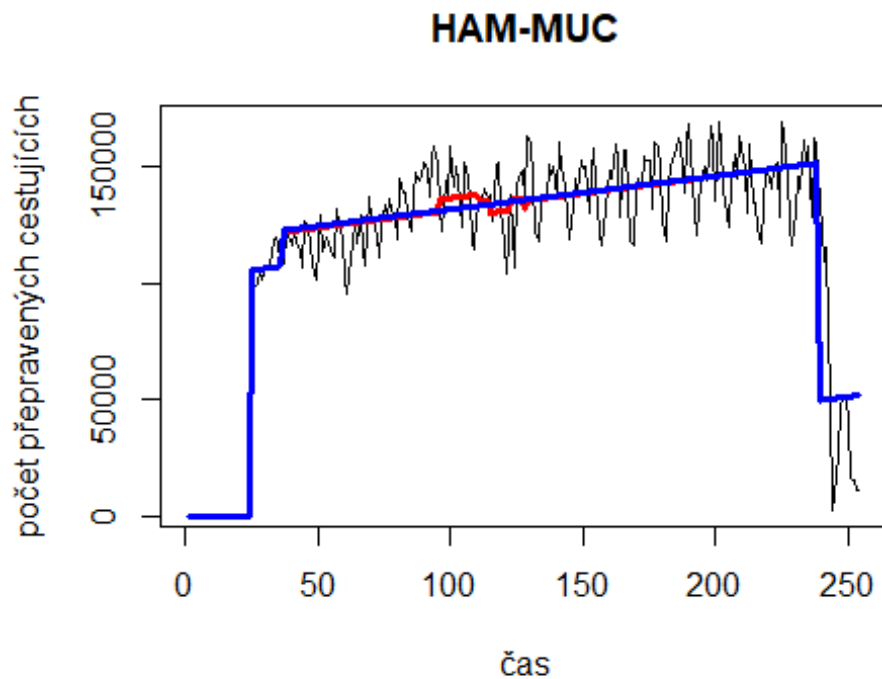
lm_HAM_MUC3 <- lm(data$HAM_MUC_30~data$t+data$X2001_TER+data$X2019_CV)
summary(lm_HAM_MUC3)

##
## Call:
## lm(formula = data$HAM_MUC_30 ~ data$t + data$X2001_TER + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -47974  -10078       10   10340   85942
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  117457.25   3188.24  36.841 < 2e-16 ***

```

```
## data$t          143.43      21.35   6.719 1.47e-10 ***
## data$X2001_TER -15371.97   5732.82  -2.681 0.00787 **
## data$X2019_CV  -102084.36   5151.46 -19.817 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 17700 on 226 degrees of freedom
## (26 observations deleted due to missingness)
## Multiple R-squared:  0.6504, Adjusted R-squared:  0.6458
## F-statistic: 140.2 on 3 and 226 DF,  p-value: < 2.2e-16

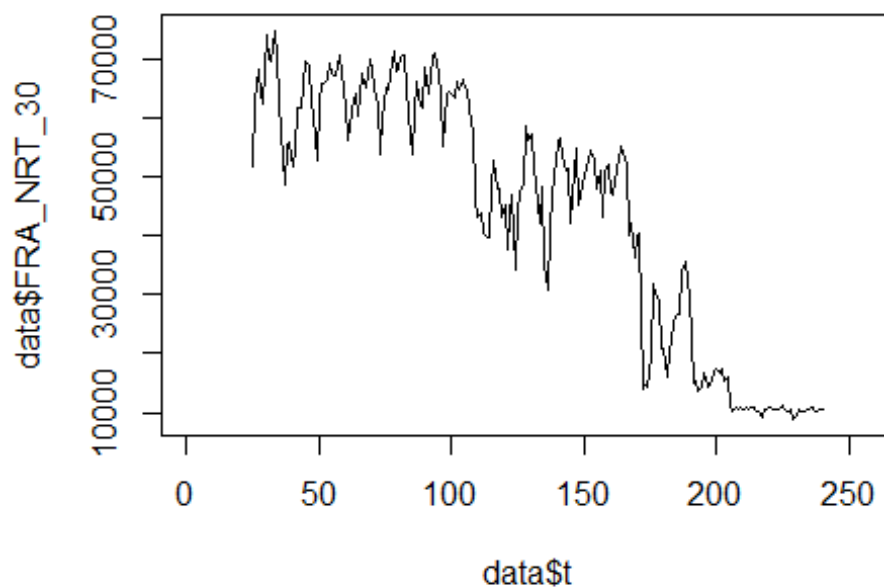
plot(data$HAM_MUC_30, type="l",xlab ="čas",ylab ="počet přepravených cestujících", main = "HAM-MUC")
fit <- c(rep(0, 24), lm_HAM_MUC1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_HAM_MUC2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Frankfurt -> letiště Narita

```
data$FRA_NRT_30 <- data$FRA_NRT/data$days * 30
plot(data$FRA_NRT_30~data$t, t="l")
```



```
lm_FRA_NRT1 <- glm(data$FRA_NRT_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_FRA_NRT1)
```

```
##
## Call:
## glm(formula = data$FRA_NRT_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -20958.7  -5604.4   -86.2    4789.0   18124.3
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   91023.08   1721.34   52.879 < 2e-16 ***
## data$t        -352.14     10.75  -32.765 < 2e-16 ***
## data$X2001_FC          NA          NA         NA      NA
## data$X2001_TER  -11448.65   2602.77   -4.399 1.75e-05 ***
## data$X2003_SARS -18534.96   2980.70   -6.218 2.77e-09 ***
## data$X2005_FLU   -3464.65   2488.57   -1.392  0.1654
## data$X2008_FC    3595.28   1964.11    1.830  0.0686 .
## data$X2009_SF   -5472.17   2281.48   -2.399  0.0174 *
## data$X2010_ER    2731.27   4115.13    0.664  0.5076
## data$X2012_MERS  2241.95   2848.64    0.787  0.4322
```

```

## data$X2013_FLU    15866.83    2540.68    6.245 2.40e-09 ***
## data$X2019_CV     3849.92    5599.19    0.688  0.4925
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 59884742)
##
## Null deviance: 9.8833e+10 on 215 degrees of freedom
## Residual deviance: 1.2276e+10 on 205 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4493.8
##
## Number of Fisher Scoring iterations: 2

lm_FRA_NRT2 <- glm(data$FRA_NRT_30~data$t+data$X2001_TER+data$X2003_SARS+data
$X2009_SF+data$X2013_FLU)
summary(lm_FRA_NRT2)

##
## Call:
## glm(formula = data$FRA_NRT_30 ~ data$t + data$X2001_TER + data$X2003_SARS
+
## data$X2009_SF + data$X2013_FLU)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -20807.9  -5836.4   -623.1   5331.1  16865.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    90675.46    1492.38  60.759 < 2e-16 ***
## data$t         -348.12      9.66 -36.037 < 2e-16 ***
## data$X2001_TER -11247.35    2535.40  -4.436 1.48e-05 ***
## data$X2003_SARS -18392.36    2947.70  -6.240 2.38e-09 ***
## data$X2009_SF  -4047.07    1939.57  -2.087  0.0381 *
## data$X2013_FLU  15557.49    2539.75   6.126 4.39e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 60526656)
##
## Null deviance: 9.8833e+10 on 215 degrees of freedom
## Residual deviance: 1.2711e+10 on 210 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4491.3
##
## Number of Fisher Scoring iterations: 2

lm_FRA_NRT3 <- lm(data$FRA_NRT_30~data$t+data$X2001_TER+data$X2003_SARS+data$
X2009_SF+data$X2013_FLU)
summary(lm_FRA_NRT3)

```

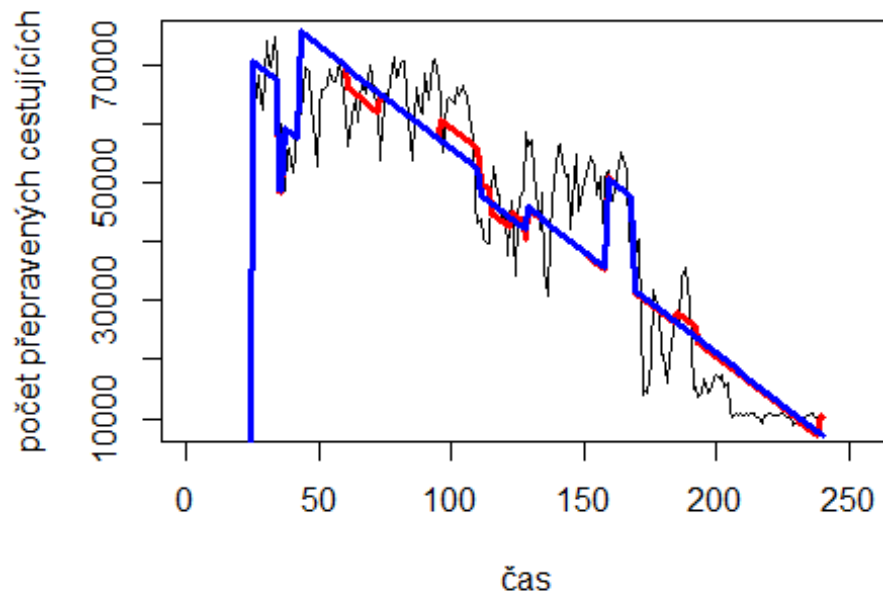
```

##
## Call:
## lm(formula = data$FRA_NRT_30 ~ data$t + data$X2001_TER + data$X2003_SARS +
##     data$X2009_SF + data$X2013_FLU)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -20807.9  -5836.4   -623.1   5331.1  16865.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    90675.46    1492.38  60.759 < 2e-16 ***
## data$t         -348.12       9.66 -36.037 < 2e-16 ***
## data$X2001_TER -11247.35    2535.40  -4.436 1.48e-05 ***
## data$X2003_SARS -18392.36    2947.70  -6.240 2.38e-09 ***
## data$X2009_SF  -4047.07    1939.57  -2.087  0.0381 *
## data$X2013_FLU  15557.49    2539.75   6.126 4.39e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7780 on 210 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.8714, Adjusted R-squared:  0.8683
## F-statistic: 284.6 on 5 and 210 DF,  p-value: < 2.2e-16

plot(data$FRA_NRT_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="FRA-NRT")
fit <- c(rep(0, 24), lm_FRA_NRT1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_FRA_NRT2$fitted.values)
lines(fit2, col="blue", lwd=3)

```


FRA-NRT

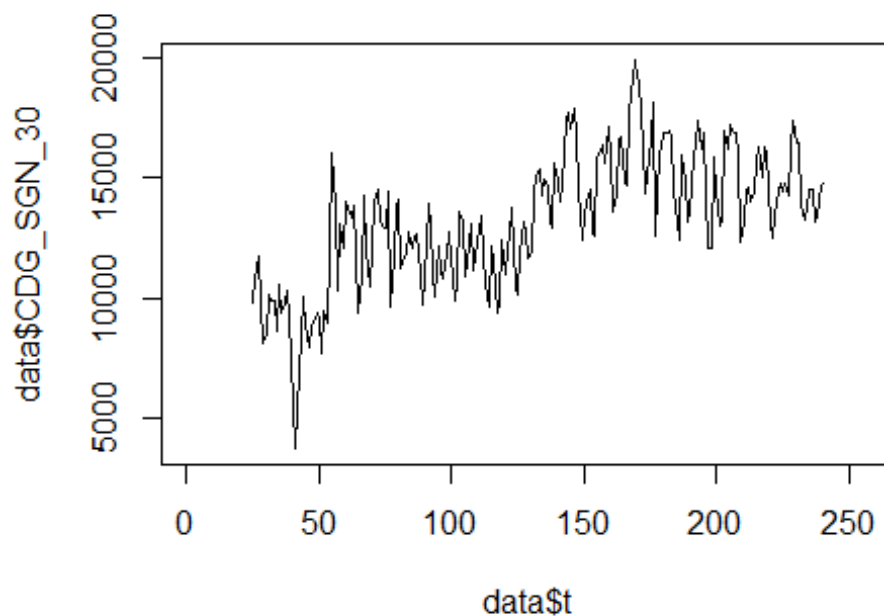


Spojení letiště

Charles de Gaulle -> letiště Ho Chi Minn

```
data$CDG_SGN_30 <- data$CDG_SGN/data$days * 30
```

```
plot(data$CDG_SGN_30~data$t, t="l")
```



```
lm_CDG_SGN1 <- glm(data$CDG_SGN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_CDG_SGN1)
```

```
##
## Call:
## glm(formula = data$CDG_SGN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -4443.6  -1440.1    9.4    1388.8   5477.7
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9971.693    415.446   24.002 < 2e-16 ***
## data$t         26.413      2.594   10.183 < 2e-16 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER  -527.313    628.179  -0.839  0.40220
## data$X2003_SARS -2866.861    719.392  -3.985  9.37e-05 ***
## data$X2005_FLU   799.866    600.615   1.332  0.18442
## data$X2008_FC   -809.090    474.038  -1.707  0.08937 .
## data$X2009_SF  -1359.741    550.636  -2.469  0.01435 *
## data$X2010_ER   -35.358    993.186  -0.036  0.97164
## data$X2012_MERS -505.687    687.519  -0.736  0.46286
```

```

## data$X2013_FLU    1697.486    613.192    2.768    0.00615 **
## data$X2019_CV    -1569.966    1351.363    -1.162    0.24668
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3488270)
##
## Null deviance: 1614860320 on 215 degrees of freedom
## Residual deviance: 715095367 on 205 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3879.7
##
## Number of Fisher Scoring iterations: 2

lm_CDG_SGN2 <- glm(data$CDG_SGN_30~data$t+data$X2003_SARS+data$X2009_SF+data$
X2013_FLU)
summary(lm_CDG_SGN2)

##
## Call:
## glm(formula = data$CDG_SGN_30 ~ data$t + data$X2003_SARS + data$X2009_SF +
## data$X2013_FLU)
##
## Deviance Residuals:
##    Min       1Q   Median       3Q      Max
## -4311.0  -1483.1    89.6   1463.3  5570.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9927.000    326.098  30.442 < 2e-16 ***
## data$t          26.130     2.162  12.087 < 2e-16 ***
## data$X2003_SARS -2943.084    710.392  -4.143 4.96e-05 ***
## data$X2009_SF  -1470.795    465.435  -3.160 0.00181 **
## data$X2013_FLU  1788.523    612.683   2.919 0.00389 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3523378)
##
## Null deviance: 1614860320 on 215 degrees of freedom
## Residual deviance: 743432798 on 211 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3876.1
##
## Number of Fisher Scoring iterations: 2

lm_CDG_SGN3 <- lm(data$CDG_SGN_30~data$t+data$X2003_SARS+data$X2009_SF+data$X
2013_FLU)
summary(lm_CDG_SGN3)

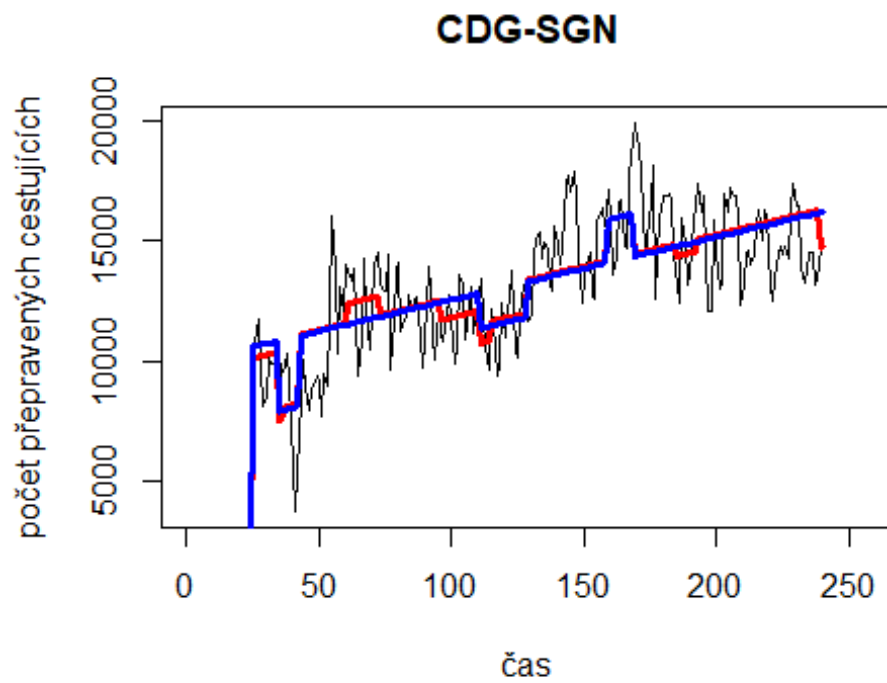
```

```

##
## Call:
## lm(formula = data$CDG_SGN_30 ~ data$t + data$X2003_SARS + data$X2009_SF +
##     data$X2013_FLU)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -4311.0 -1483.1   89.6  1463.3  5570.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9927.000    326.098   30.442 < 2e-16 ***
## data$t         26.130      2.162   12.087 < 2e-16 ***
## data$X2003_SARS -2943.084    710.392  -4.143 4.96e-05 ***
## data$X2009_SF  -1470.795    465.435  -3.160 0.00181 **
## data$X2013_FLU  1788.523    612.683   2.919 0.00389 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1877 on 211 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.5396, Adjusted R-squared:  0.5309
## F-statistic: 61.83 on 4 and 211 DF,  p-value: < 2.2e-16

plot(data$CDG_SGN_30, type="l", xlab = "čas", ylab = "počet přepravených cestujíc
ích", main = "CDG-SGN")
fit <- c(rep(0, 24), lm_CDG_SGN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CDG_SGN2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

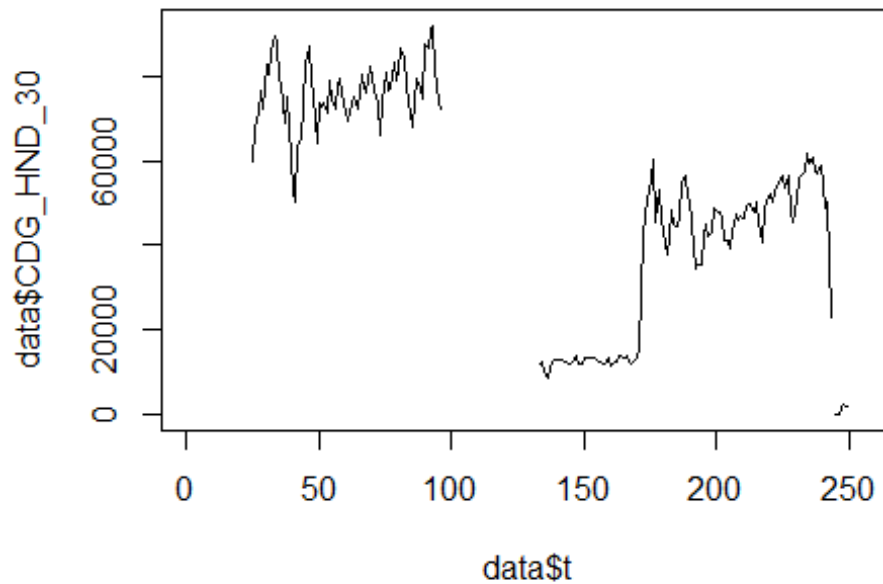


Spojení letiště

Charles de Gaulle -> letiště Haneda

```
data$CDG_HND_30 <- data$CDG_HND/data$days * 30
```

```
plot(data$CDG_HND_30~data$t, t="l")
```



```
lm_CDG_HND1 <- glm(data$CDG_HND_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_CDG_HND1)
```

```
##
## Call:
## glm(formula = data$CDG_HND_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##     data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -43343  -3972   4312  12301  33862
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  75616.46   4419.13  17.111 < 2e-16 ***
## data$t       -172.73     27.32  -6.322 2.00e-09 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER    8052.24   6610.96   1.218  0.2248
## data$X2003_SARS  -3819.78   7557.75  -0.505  0.6139
## data$X2005_FLU   11997.45   6322.29   1.898  0.0594 .
## data$X2008_FC    13112.53  19706.39   0.665  0.5067
## data$X2009_SF      NA           NA      NA      NA
## data$X2010_ER      NA           NA      NA      NA
## data$X2012_MERS   4276.99   7212.17   0.593  0.5539
```

```

## data$X2013_FLU  -34504.52    6436.39  -5.361 2.53e-07 ***
## data$X2019_CV   -9402.98    6928.29  -1.357  0.1764
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 383298652)
##
## Null deviance: 1.2328e+11 on 187 degrees of freedom
## Residual deviance: 6.8610e+10 on 179 degrees of freedom
## (68 observations deleted due to missingness)
## AIC: 4260
##
## Number of Fisher Scoring iterations: 2

lm_CDG_HND2 <- glm(data$CDG_HND_30~data$t+data$X2013_FLU)
summary(lm_CDG_HND2)

##
## Call:
## glm(formula = data$CDG_HND_30 ~ data$t + data$X2013_FLU)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -44363  -4306   4948  12414  30209
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    80632.31    3230.51  24.960 < 2e-16 ***
## data$t         -202.11      20.62  -9.802 < 2e-16 ***
## data$X2013_FLU -34715.71    6402.82  -5.422 1.82e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 385828818)
##
## Null deviance: 1.2328e+11 on 187 degrees of freedom
## Residual deviance: 7.1378e+10 on 185 degrees of freedom
## (68 observations deleted due to missingness)
## AIC: 4255.4
##
## Number of Fisher Scoring iterations: 2

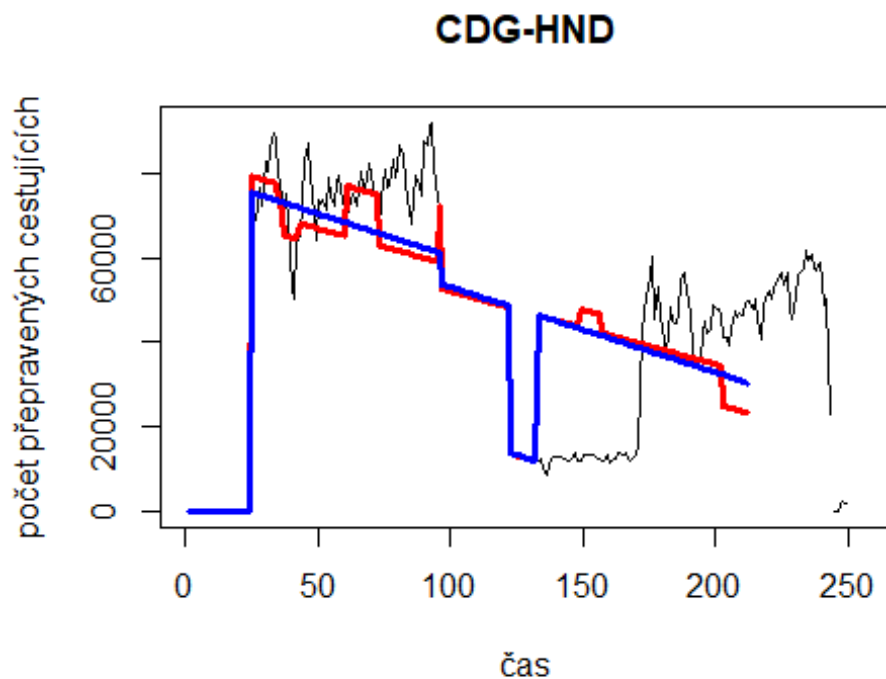
lm_CDG_HND3 <- lm(data$CDG_HND_30~data$t+data$X2013_FLU)
summary(lm_CDG_HND3)

##
## Call:
## lm(formula = data$CDG_HND_30 ~ data$t + data$X2013_FLU)
##
## Residuals:
##   Min       1Q   Median       3Q      Max

```

```
## -44363 -4306 4948 12414 30209
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 80632.31 3230.51 24.960 < 2e-16 ***
## data$t -202.11 20.62 -9.802 < 2e-16 ***
## data$X2013_FLU -34715.71 6402.82 -5.422 1.82e-07 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 19640 on 185 degrees of freedom
## (68 observations deleted due to missingness)
## Multiple R-squared: 0.421, Adjusted R-squared: 0.4147
## F-statistic: 67.26 on 2 and 185 DF, p-value: < 2.2e-16

plot(data$CDG_HND_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
main = "CDG-HND")
fit <- c(rep(0, 24), lm_CDG_HND1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CDG_HND2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

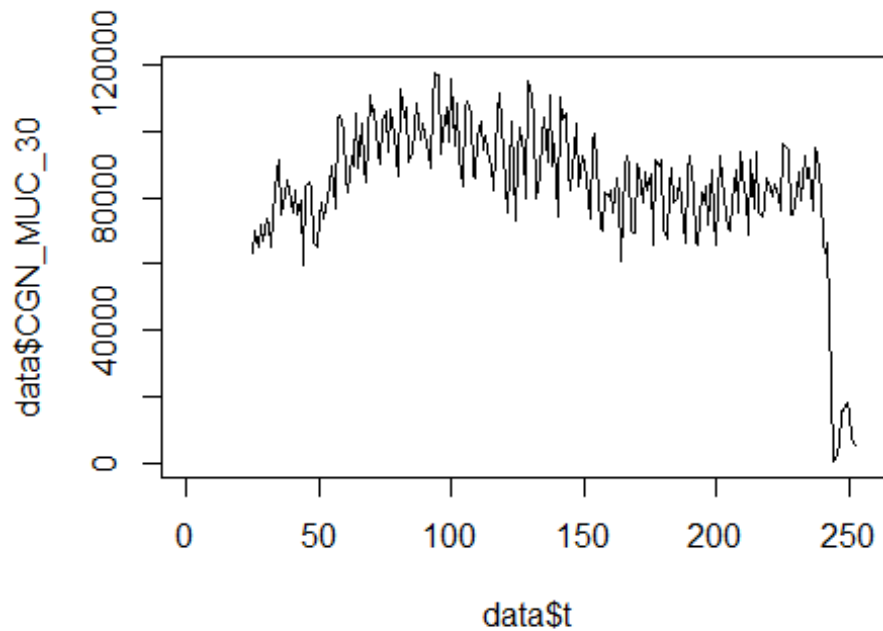


Spojení letiště

Koln Bonn -> letiště Muenchen

```
data$CGN_MUC_30 <- data$CGN_MUC/data$days * 30
```

```
plot(data$CGN_MUC_30~data$t, t="l")
```

```
lm_CGN_MUC1 <- glm(data$CGN_MUC_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_CGN_MUC1)

##
## Call:
## glm(formula = data$CGN_MUC_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -33169  -8249   -960    8641   53454
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   95344.20   2501.79   38.110 < 2e-16 ***
## data$t        -56.90     16.14   -3.526 0.000513 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER -19928.84   4312.59  -4.621 6.49e-06 ***
## data$X2008_FC    8773.80   3272.86   2.681 0.007899 **
## data$X2009_SF    1395.04   3843.22   0.363 0.716960
## data$X2010_ER    3097.84   6977.50   0.444 0.657494
## data$X2019_CV  -53901.06   4011.97 -13.435 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 172242155)
```

```

##
## Null deviance: 9.2640e+10 on 227 degrees of freedom
## Residual deviance: 3.8066e+10 on 221 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4979.8
##
## Number of Fisher Scoring iterations: 2

lm_CGN_MUC2 <- glm(data$CGN_MUC_30~data$t+data$X2001_TER+data$X2008_FC+data$X2019_CV)
summary(lm_CGN_MUC2)

##
## Call:
## glm(formula = data$CGN_MUC_30 ~ data$t + data$X2001_TER + data$X2008_FC +
## data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -33445 -8309 -949 8470 53448
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 95658.94 2458.65 38.907 < 2e-16 ***
## data$t -57.77 16.05 -3.601 0.000391 ***
## data$X2001_TER -20216.86 4282.61 -4.721 4.15e-06 ***
## data$X2008_FC 8844.72 3206.05 2.759 0.006284 **
## data$X2019_CV -54000.80 3998.02 -13.507 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 171223747)
##
## Null deviance: 9.2640e+10 on 227 degrees of freedom
## Residual deviance: 3.8183e+10 on 223 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4976.5
##
## Number of Fisher Scoring iterations: 2

lm_CGN_MUC3 <- lm(data$CGN_MUC_30~data$t+data$X2001_TER+data$X2008_FC+data$X2019_CV)
summary(lm_CGN_MUC3)

##
## Call:
## lm(formula = data$CGN_MUC_30 ~ data$t + data$X2001_TER + data$X2008_FC +
## data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max

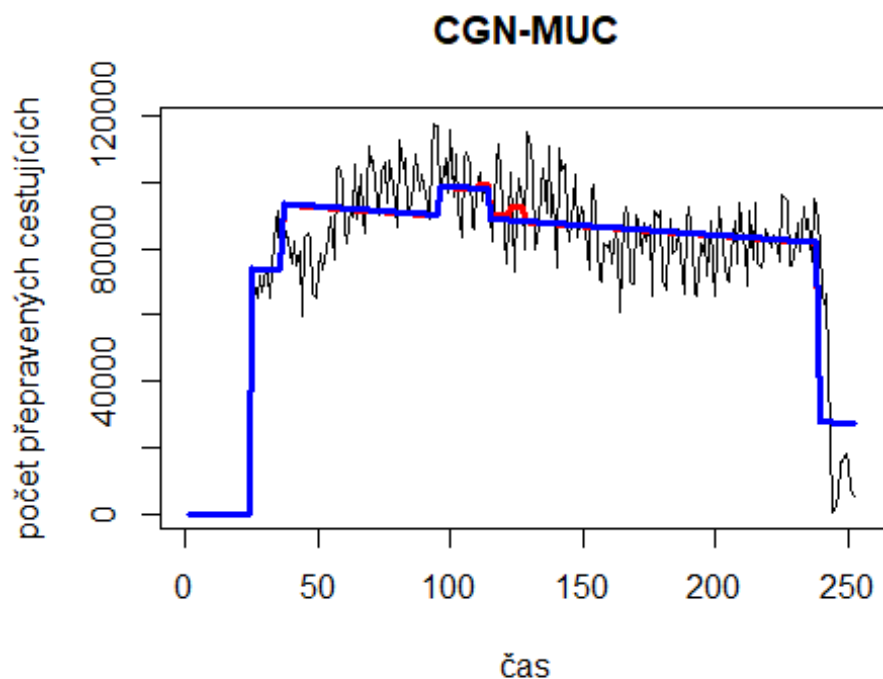
```

```

## -33445 -8309 -949 8470 53448
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 95658.94 2458.65 38.907 < 2e-16 ***
## data$t -57.77 16.05 -3.601 0.000391 ***
## data$X2001_TER -20216.86 4282.61 -4.721 4.15e-06 ***
## data$X2008_FC 8844.72 3206.05 2.759 0.006284 **
## data$X2019_CV -54000.80 3998.02 -13.507 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 13090 on 223 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared: 0.5878, Adjusted R-squared: 0.5804
## F-statistic: 79.51 on 4 and 223 DF, p-value: < 2.2e-16

plot(data$CGN_MUC_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "CGN-MUC")
fit <- c(rep(0, 24), lm_CGN_MUC1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CGN_MUC2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

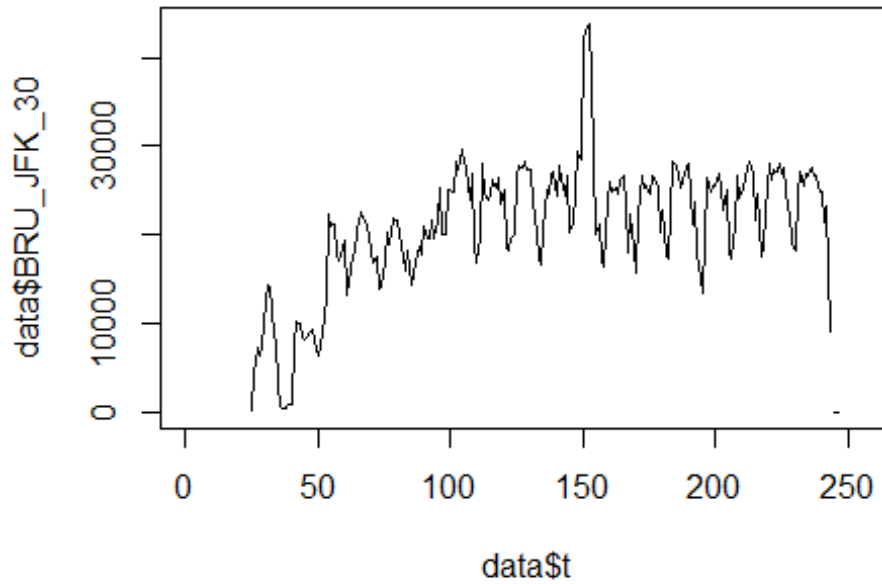


Spojeni Brusel ->

JFK

```
data$BRU_JFK_30 <- data$BRU_JFK/data$days * 30
```

```
plot(data$BRU_JFK_30~data$t, t="l")
```



```
lm_BRU_JFK1 <- glm(data$BRU_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_BRU_JFK1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$BRU_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
## -15019.5  -3497.3    538.8   2780.6  21457.6
```

```
##
```

```
## Coefficients: (1 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  13743.097   1042.440   13.184 < 2e-16 ***
## data$t       56.600     6.638    8.527 2.79e-15 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER  -6290.565   1707.556   -3.684 0.000291 ***
## data$X2003_SARS -11326.383   1976.673   -5.730 3.40e-08 ***
## data$X2008_FC   4262.550   1300.644    3.277 0.001224 **
## data$X2009_SF   2321.410   1522.723    1.525 0.128864
```

```

## data$X2010_ER      1148.566   2761.129    0.416 0.677846
## data$X2019_CV     -12645.225   2105.414   -6.006 8.12e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 26970105)
##
##      Null deviance: 1.2469e+10  on 220  degrees of freedom
## Residual deviance: 5.7446e+09  on 213  degrees of freedom
## (35 observations deleted due to missingness)
## AIC: 4418.4
##
## Number of Fisher Scoring iterations: 2

lm_BRU_JFK2 <- glm(data$BRU_JFK_30~data$t+data$X2001_TER+data$X2003_SARS+data
$X2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_BRU_JFK2)

##
## Call:
## glm(formula = data$BRU_JFK_30 ~ data$t + data$X2001_TER + data$X2003_SARS
+
##      data$X2008_FC + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min        1Q      Median        3Q        Max
## -15019.4   -3435.1     506.4     2860.7    21451.4
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   13752.893   1040.159   13.222 < 2e-16 ***
## data$t         56.576     6.625    8.540 2.51e-15 ***
## data$X2001_TER -6298.483   1704.148   -3.696 0.000278 ***
## data$X2003_SARS -11333.279   1972.781   -5.745 3.14e-08 ***
## data$X2008_FC  4185.975   1285.061    3.257 0.001307 **
## data$X2009_SF  2650.533   1298.514    2.041 0.042458 *
## data$X2019_CV -12649.230   2101.320   -6.020 7.51e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 26865884)
##
##      Null deviance: 1.2469e+10  on 220  degrees of freedom
## Residual deviance: 5.7493e+09  on 214  degrees of freedom
## (35 observations deleted due to missingness)
## AIC: 4416.6
##
## Number of Fisher Scoring iterations: 2

```

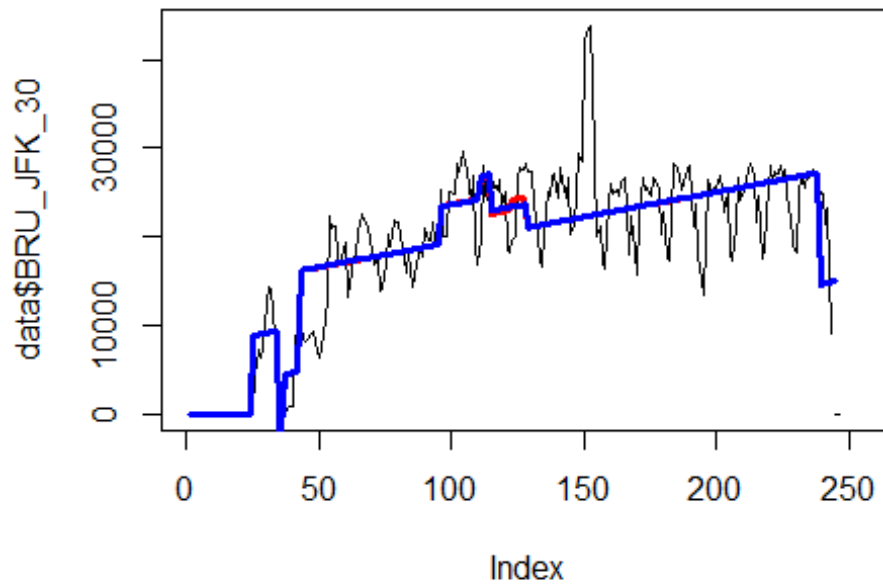
```

lm_BRU_JFK3 <- glm(data$BRU_JFK_30~data$t+data$X2001_TER+data$X2003_SARS+data
$X2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_BRU_JFK3)

##
## Call:
## glm(formula = data$BRU_JFK_30 ~ data$t + data$X2001_TER + data$X2003_SARS
+
##     data$X2008_FC + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -15019.4  -3435.1    506.4   2860.7  21451.4
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   13752.893   1040.159   13.222 < 2e-16 ***
## data$t         56.576     6.625    8.540 2.51e-15 ***
## data$X2001_TER -6298.483   1704.148  -3.696 0.000278 ***
## data$X2003_SARS -11333.279   1972.781  -5.745 3.14e-08 ***
## data$X2008_FC  4185.975   1285.061   3.257 0.001307 **
## data$X2009_SF  2650.533   1298.514   2.041 0.042458 *
## data$X2019_CV -12649.230   2101.320  -6.020 7.51e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 26865884)
##
## Null deviance: 1.2469e+10 on 220 degrees of freedom
## Residual deviance: 5.7493e+09 on 214 degrees of freedom
## (35 observations deleted due to missingness)
## AIC: 4416.6
##
## Number of Fisher Scoring iterations: 2

plot(data$BRU_JFK_30, type="l")
fit <- c(rep(0, 24), lm_BRU_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_BRU_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

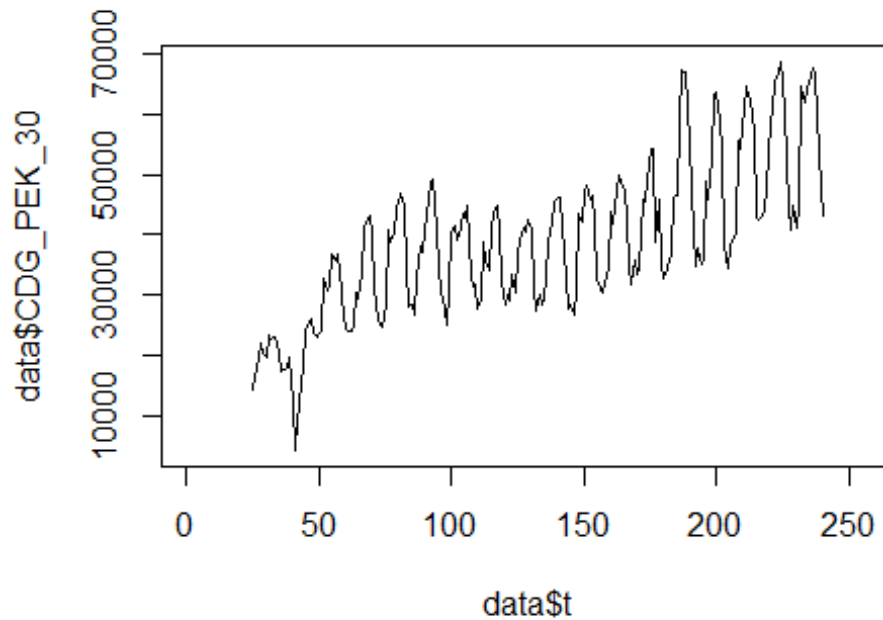


Spojeni CDG ->

Peking

```
data$CDG_PEK_30 <- data$CDG_PEK/data$days * 30
```

```
plot(data$CDG_PEK_30~data$t, t="l")
```



```
lm_CDG_PEK1 <- glm(data$CDG_PEK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_CDG_PEK1)
```

```
##
## Call:
## glm(formula = data$CDG_PEK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -19602.3  -7012.7   337.9   6038.6  16180.9
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    20334.34   1849.38  10.995 < 2e-16 ***
## data$t         143.64     11.55  12.440 < 2e-16 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER  -2918.07   2796.37  -1.044  0.29794
## data$X2003_SARS -10361.17   3202.41  -3.235  0.00142 **
## data$X2005_FLU   2532.87   2673.67   0.947  0.34458
## data$X2008_FC    18.77    2110.21   0.009  0.99291
## data$X2009_SF  -1246.66   2451.18  -0.509  0.61158
## data$X2010_ER   -858.61   4421.22  -0.194  0.84621
## data$X2012_MERS  6371.21   3060.53   2.082  0.03861 *
```



```

## data$X2013_FLU    -1492.31    2729.66   -0.547   0.58518
## data$X2019_CV    -9411.45    6015.67   -1.564   0.11924
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 69124722)
##
##      Null deviance: 3.6066e+10  on 215  degrees of freedom
## Residual deviance: 1.4171e+10  on 205  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4524.8
##
## Number of Fisher Scoring iterations: 2

lm_CDG_PEK2 <- glm(data$CDG_PEK_30~data$t+data$X2003_SARS+data$X2012_MERS)
summary(lm_CDG_PEK2)

##
## Call:
## glm(formula = data$CDG_PEK_30 ~ data$t + data$X2003_SARS + data$X2012_MERS
## )
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -19597.3   -7469.5    -30.1    6002.6   16603.2
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    20230.119   1415.470   14.292 < 2e-16 ***
## data$t          142.219     9.613    14.794 < 2e-16 ***
## data$X2003_SARS -10931.794   3126.753   -3.496 0.000575 ***
## data$X2012_MERS  6743.119    3034.412    2.222 0.027325 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 68718073)
##
##      Null deviance: 3.6066e+10  on 215  degrees of freedom
## Residual deviance: 1.4568e+10  on 212  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4516.8
##
## Number of Fisher Scoring iterations: 2

lm_CDG_PEK3 <- lm(data$CDG_PEK_30~data$t+data$X2003_SARS+data$X2012_MERS)
summary(lm_CDG_PEK3)

##
## Call:
## lm(formula = data$CDG_PEK_30 ~ data$t + data$X2003_SARS + data$X2012_MERS)
##

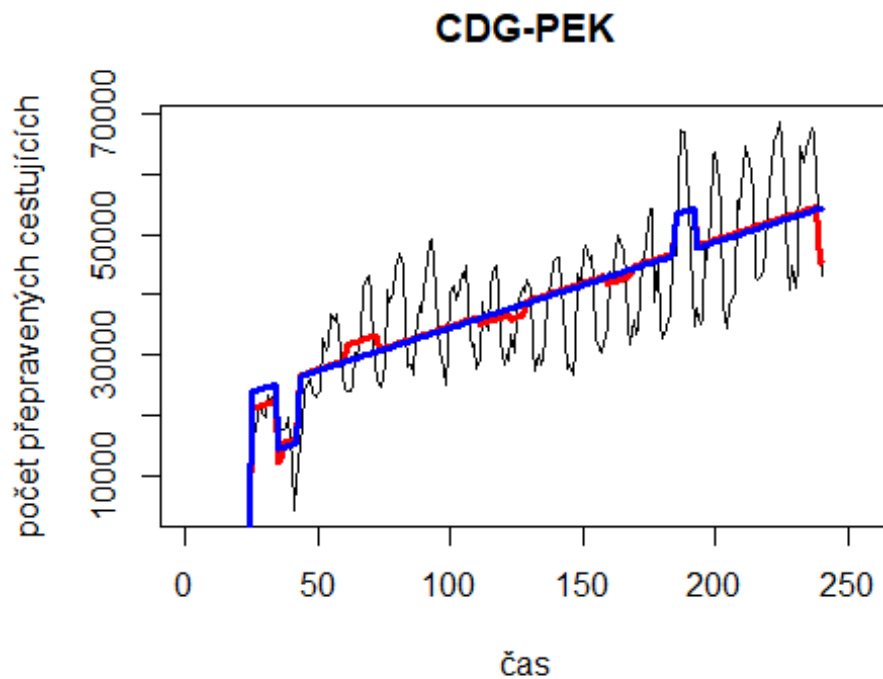
```

```

## Residuals:
##      Min       1Q   Median       3Q      Max
## -19597.3  -7469.5   -30.1   6002.6  16603.2
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    20230.119   1415.470   14.292 < 2e-16 ***
## data$t          142.219     9.613   14.794 < 2e-16 ***
## data$X2003_SARS -10931.794   3126.753   -3.496 0.000575 ***
## data$X2012_MERS  6743.119    3034.412    2.222 0.027325 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 8290 on 212 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.5961, Adjusted R-squared:  0.5904
## F-statistic: 104.3 on 3 and 212 DF,  p-value: < 2.2e-16

plot(data$CDG_PEK_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="CDG-PEK")
fit <- c(rep(0, 24), lm_CDG_PEK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CDG_PEK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

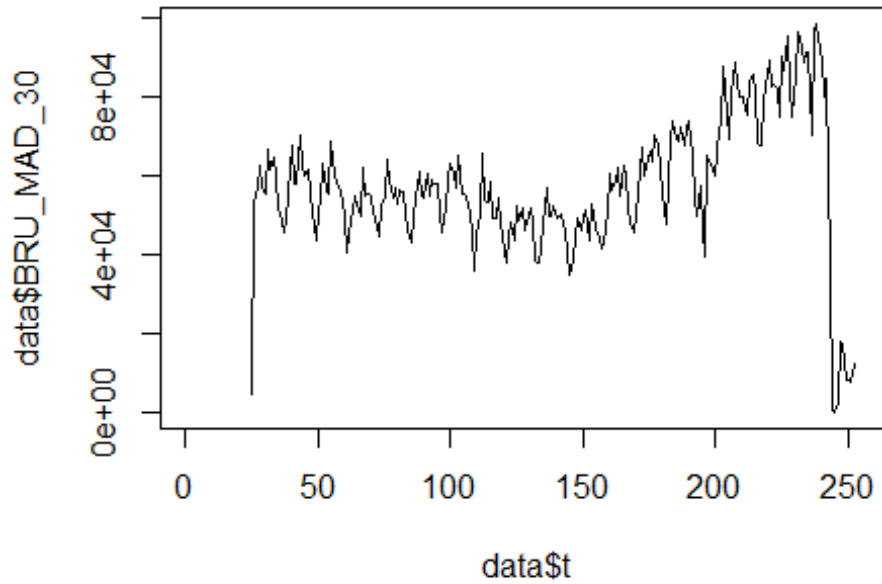


Madrid

Spojeni Brusel ->

```
data$BRU_MAD_30 <- data$BRU_MAD/data$days * 30
```

```
plot(data$BRU_MAD_30~data$t, t="l")
```



```
lm_BRU_MAD1 <- glm(data$BRU_MAD_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
```

```
summary(lm_BRU_MAD1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$BRU_MAD_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
##       data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -48679  -8939       818    7254   60276
```

```
##
```

```
## Coefficients: (1 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)    41364.06   2721.85  15.197 < 2e-16 ***  
## data$t         137.14     17.56   7.811 2.27e-13 ***  
## data$X2001_FC      NA         NA      NA      NA  
## data$X2001_TER    8220.71   4691.94   1.752  0.0811 .  
## data$X2008_FC   -603.86   3560.75  -0.170  0.8655  
## data$X2009_SF  -7119.31   4181.27  -1.703  0.0900 .  
## data$X2010_ER  -2457.87   7591.26  -0.324  0.7464  
## data$X2019_CV -42294.23   4364.87  -9.690 < 2e-16 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 203876484)
##
##      Null deviance: 6.9337e+10  on 227  degrees of freedom
## Residual deviance: 4.5057e+10  on 221  degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5018.3
##
## Number of Fisher Scoring iterations: 2

lm_BRU_MAD2 <- glm(data$BRU_MAD_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_BRU_MAD2)

##
## Call:
## glm(formula = data$BRU_MAD_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -42218   -8985    530    7122   60197
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  43426.37   2334.82  18.599 < 2e-16 ***
## data$t       125.03     15.84   7.895 1.28e-13 ***
## data$X2009_SF -8551.94   3525.21  -2.426  0.0161 *
## data$X2019_CV -41384.64   4338.35 -9.539 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 204163111)
##
##      Null deviance: 6.9337e+10  on 227  degrees of freedom
## Residual deviance: 4.5733e+10  on 224  degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5015.7
##
## Number of Fisher Scoring iterations: 2

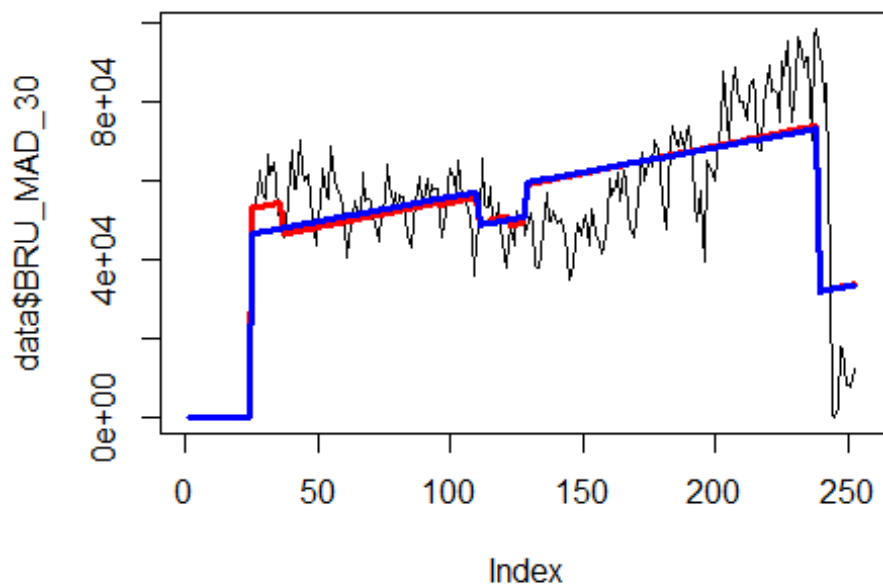
lm_BRU_MAD3 <- lm(data$BRU_MAD_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_BRU_MAD3)

##
## Call:
## lm(formula = data$BRU_MAD_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -42218   -8985    530    7122   60197

```

```
##
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  43426.37   2334.82  18.599 < 2e-16 ***
## data$t       125.03     15.84   7.895 1.28e-13 ***
## data$X2009_SF -8551.94   3525.21  -2.426  0.0161 *
## data$X2019_CV -41384.64  4338.35  -9.539 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 14290 on 224 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.3404, Adjusted R-squared:  0.3316
## F-statistic: 38.54 on 3 and 224 DF,  p-value: < 2.2e-16

plot(data$BRU_MAD_30, type="l")
fit <- c(rep(0, 24), lm_BRU_MAD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_BRU_MAD2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

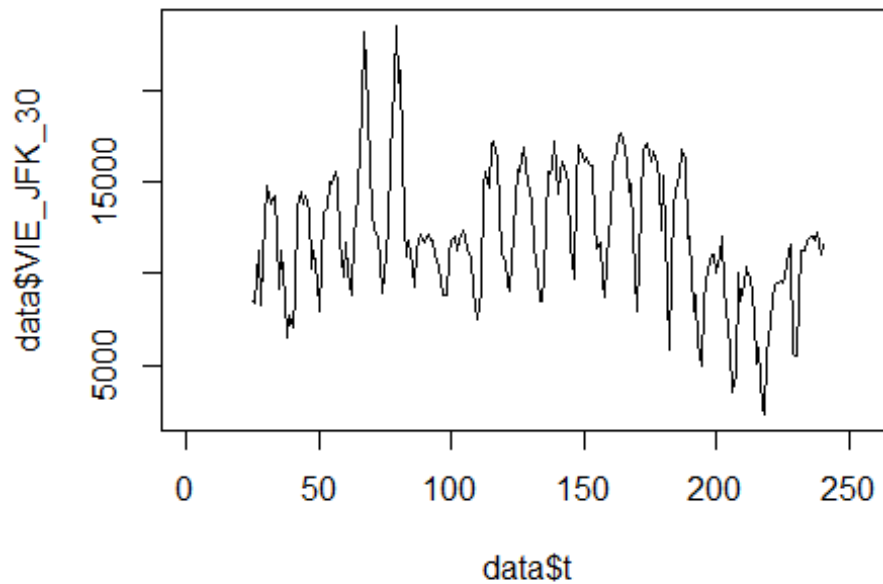


Spojeni Vienna ->

JFK

```
data$VIE_JFK_30 <- data$VIE_JFK/data$days * 30

plot(data$VIE_JFK_30~data$t, t="l")
```



```
lm_VIE_JFK1 <- glm(data$VIE_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
```

```
summary(lm_VIE_JFK1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$VIE_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
## data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +  
## data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -8128.5  -2267.4   -517.4   2278.3   9884.0
```

```
##
```

```
## Coefficients: (1 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)  15357.482    676.698   22.695 < 2e-16 ***  
## data$t      -22.294      4.309   -5.174 5.38e-07 ***  
## data$X2001_FC      NA          NA      NA      NA  
## data$X2001_TER  -2465.553    1108.432  -2.224 0.027199 *  
## data$X2003_SARS -4728.662    1283.122  -3.685 0.000291 ***  
## data$X2008_FC  -2198.298     844.288  -2.604 0.009886 **  
## data$X2009_SF   1350.749     988.446   1.367 0.173245  
## data$X2010_ER    638.487    1792.332   0.356 0.722028  
## data$X2019_CV   1265.494    2432.412   0.520 0.603434
```

```
## ---
```

```

## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 11364399)
##
## Null deviance: 2824177543 on 215 degrees of freedom
## Residual deviance: 2363794921 on 208 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4132
##
## Number of Fisher Scoring iterations: 2

lm_VIE_JFK2 <- glm(data$VIE_JFK_30~data$t+data$X2001_TER+data$X2003_SARS+data
$X2008_FC)
summary(lm_VIE_JFK2)

##
## Call:
## glm(formula = data$VIE_JFK_30 ~ data$t + data$X2001_TER + data$X2003_SARS
+
## data$X2008_FC)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -8239.9 -2337.3 -533.6 2562.9 9724.9
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 15543.685 662.081 23.477 < 2e-16 ***
## data$t -22.637 4.237 -5.343 2.36e-07 ***
## data$X2001_TER -2618.850 1104.871 -2.370 0.018676 *
## data$X2003_SARS -4863.337 1281.910 -3.794 0.000194 ***
## data$X2008_FC -2064.122 831.480 -2.482 0.013828 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 11400593)
##
## Null deviance: 2824177543 on 215 degrees of freedom
## Residual deviance: 2405525225 on 211 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4129.7
##
## Number of Fisher Scoring iterations: 2

lm_VIE_JFK3 <- glm(data$VIE_JFK_30~data$t+data$X2001_TER+data$X2003_SARS+data
$X2008_FC)
summary(lm_VIE_JFK3)

##
## Call:
## glm(formula = data$VIE_JFK_30 ~ data$t + data$X2001_TER + data$X2003_SARS

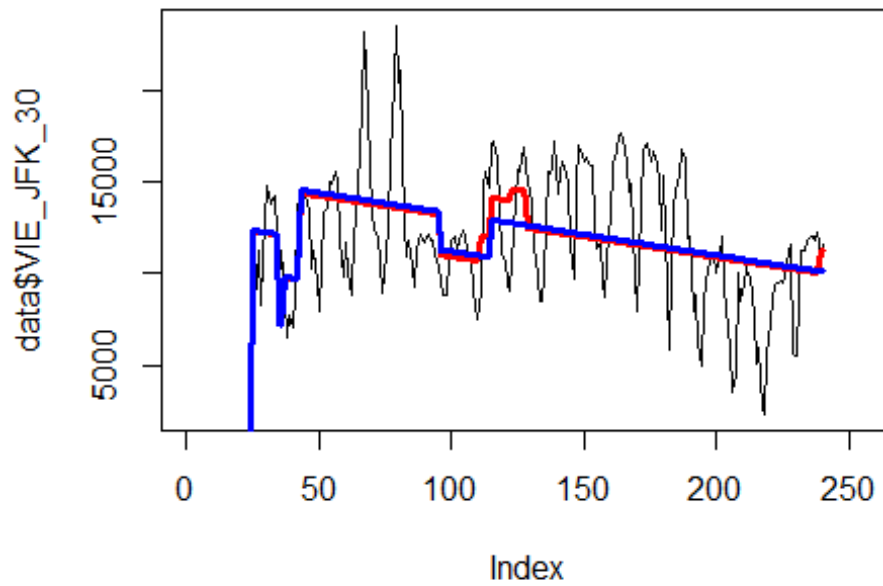
```

```

+
##      data$X2008_FC)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q        Max
## -8239.9  -2337.3   -533.6   2562.9   9724.9
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  15543.685    662.081  23.477 < 2e-16 ***
## data$t       -22.637      4.237   -5.343 2.36e-07 ***
## data$X2001_TER -2618.850   1104.871  -2.370 0.018676 *
## data$X2003_SARS -4863.337   1281.910  -3.794 0.000194 ***
## data$X2008_FC  -2064.122    831.480  -2.482 0.013828 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 11400593)
##
##      Null deviance: 2824177543  on 215  degrees of freedom
## Residual deviance: 2405525225  on 211  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4129.7
##
## Number of Fisher Scoring iterations: 2

plot(data$VIE_JFK_30, type="l")
fit <- c(rep(0, 24), lm_VIE_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_VIE_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

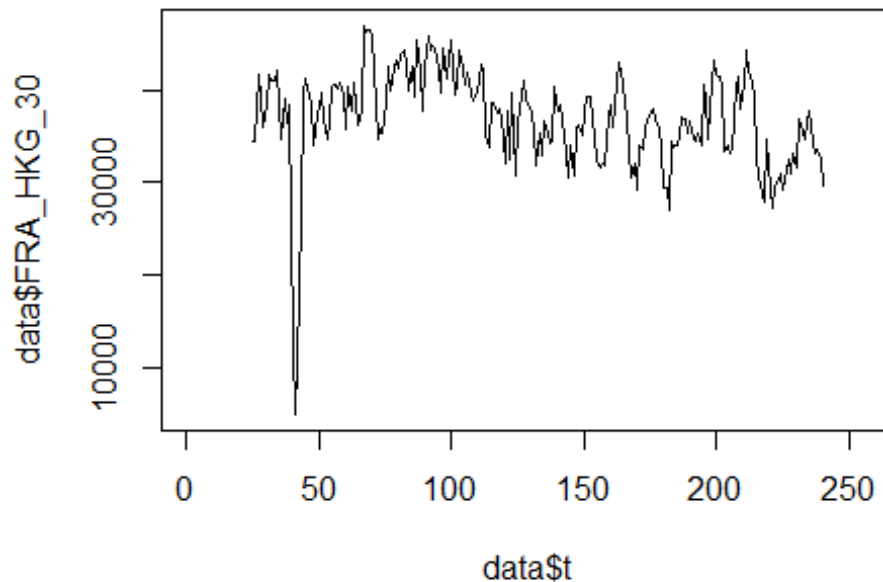



Spojeni Frankfurt

-> Hongkong

```
data$FRA_HKG_30 <- data$FRA_HKG/data$days * 30
```

```
plot(data$FRA_HKG_30~data$t, t="l")
```



```
lm_FRA_HKG1 <- glm(data$FRA_HKG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_FRA_HKG1)
```

```
##
## Call:
## glm(formula = data$FRA_HKG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -21542.3  -2346.0   -14.6    2660.5   12412.8
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   40727.829   1025.464   39.716 < 2e-16 ***
## data$t        -28.333     6.403   -4.425 1.56e-05 ***
## data$X2001_FC          NA          NA          NA      NA
## data$X2001_TER    885.440   1550.563    0.571  0.56860
## data$X2003_SARS -13012.949   1775.707   -7.328 5.27e-12 ***
## data$X2005_FLU   2325.412   1482.527    1.569  0.11830
## data$X2008_FC    3291.931   1170.089    2.813  0.00538 **
## data$X2009_SF   -1080.462   1359.159   -0.795  0.42756
## data$X2010_ER    1052.597   2451.527    0.429  0.66811
## data$X2012_MERS   133.962   1697.034    0.079  0.93716
```

```

## data$X2013_FLU      1612.722   1513.570   1.066   0.28790
## data$X2019_CV      -2880.173   3335.632  -0.863   0.38890
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 21253092)
##
## Null deviance: 6348987268  on 215  degrees of freedom
## Residual deviance: 4356883889  on 205  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4270
##
## Number of Fisher Scoring iterations: 2

lm_FRA_HKG2 <- glm(data$FRA_HKG_30~data$t+data$X2003_SARS+data$X2008_FC)
summary(lm_FRA_HKG2)

##
## Call:
## glm(formula = data$FRA_HKG_30 ~ data$t + data$X2003_SARS + data$X2008_FC)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -21753.6  -2344.4   -97.6    2609.5   12185.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   41486.676    811.895  51.099 < 2e-16 ***
## data$t         -32.326     5.315  -6.082 5.45e-09 ***
## data$X2003_SARS -13396.699   1741.453  -7.693 5.35e-13 ***
## data$X2008_FC   2724.899    1119.769   2.433 0.0158 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 21075745)
##
## Null deviance: 6348987268  on 215  degrees of freedom
## Residual deviance: 4468057877  on 212  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4261.5
##
## Number of Fisher Scoring iterations: 2

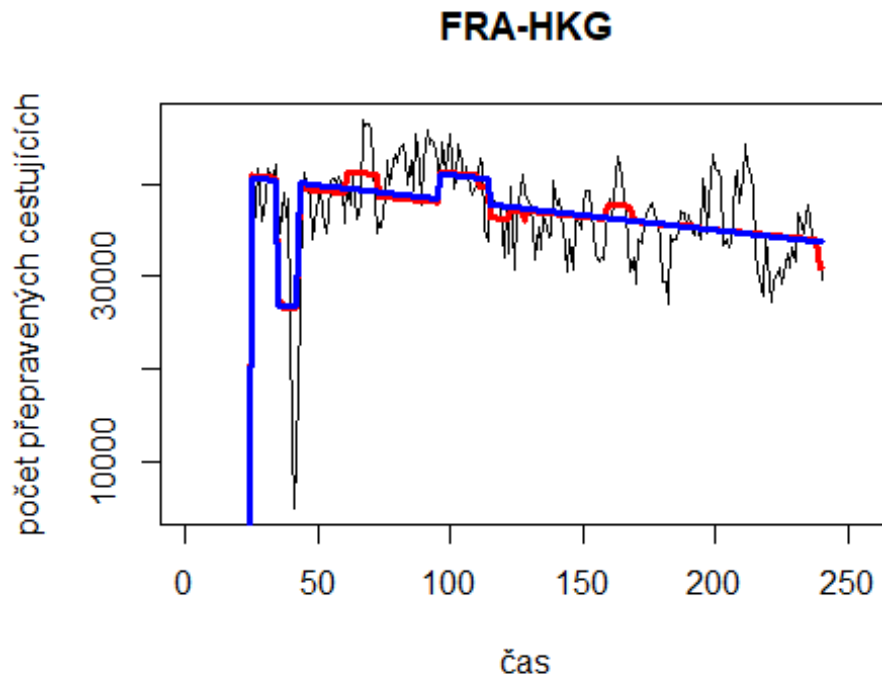
lm_FRA_HKG3 <- lm(data$FRA_HKG_30~data$t+data$X2003_SARS+data$X2008_FC)
summary(lm_FRA_HKG3)

##
## Call:
## lm(formula = data$FRA_HKG_30 ~ data$t + data$X2003_SARS + data$X2008_FC)
##
## Residuals:

```

```
##      Min      1Q   Median      3Q      Max
## -21753.6 -2344.4   -97.6   2609.5 12185.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   41486.676    811.895   51.099 < 2e-16 ***
## data$t        -32.326      5.315   -6.082 5.45e-09 ***
## data$X2003_SARS -13396.699   1741.453  -7.693 5.35e-13 ***
## data$X2008_FC   2724.899    1119.769   2.433 0.0158 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4591 on 212 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.2963, Adjusted R-squared:  0.2863
## F-statistic: 29.75 on 3 and 212 DF,  p-value: 4.297e-16

plot(data$FRA_HKG_30, type="l", xlab="čas", ylab="počet přepravených cestujících h", main="FRA-HKG")
fit <- c(rep(0, 24), lm_FRA_HKG1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_FRA_HKG2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

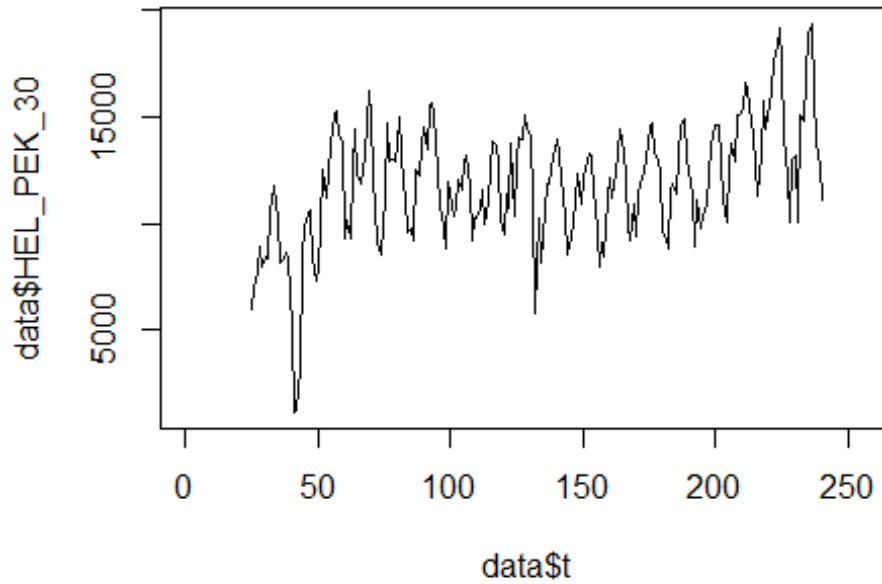


Helsinki -> letiště Peking

Spojení letiště

```
data$HEL_PEK_30 <- data$HEL_PEK/data$days * 30
```

```
plot(data$HEL_PEK_30~data$t, t="l")
```



```
lm_HEL_PEK1 <- glm(data$HEL_PEK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_HEL_PEK1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$HEL_PEK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
## -7227.9  -1461.2    71.4   1704.2   5298.6
```

```
##
```

```
## Coefficients: (1 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    9458.435    522.873   18.089 < 2e-16 ***
## data$t         19.606      3.265    6.006 8.56e-09 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER   -617.181    790.615  -0.781  0.4359
## data$X2003_SARS -3668.604    905.414  -4.052 7.21e-05 ***
## data$X2005_FLU   1653.873    755.924   2.188  0.0298 *
```

```

## data$X2008_FC      -559.087    596.616  -0.937    0.3498
## data$X2009_SF      193.966    693.021   0.280    0.7798
## data$X2010_ER      891.985   1250.007   0.714    0.4763
## data$X2012_MERS   -654.351    865.299  -0.756    0.4504
## data$X2013_FLU    -742.108    771.753  -0.962    0.3374
## data$X2019_CV    -2264.904   1700.803  -1.332    0.1844
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 5525527)
##
## Null deviance: 1689321875  on 215  degrees of freedom
## Residual deviance: 1132732960  on 205  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3979.1
##
## Number of Fisher Scoring iterations: 2

lm_HEL_PEK2 <- glm(data$HEL_PEK_30~data$t+data$X2003_SARS+data$X2005_FLU)
summary(lm_HEL_PEK2)

##
## Call:
## glm(formula = data$HEL_PEK_30 ~ data$t + data$X2003_SARS + data$X2005_FLU)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -7088.2  -1523.5    27.3   1796.5   5425.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9315.707   426.149  21.860 < 2e-16 ***
## data$t         19.676     2.792   7.048 2.51e-11 ***
## data$X2003_SARS -3682.894   891.858  -4.129 5.23e-05 ***
## data$X2005_FLU  1791.898   726.790   2.465  0.0145 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 5491993)
##
## Null deviance: 1689321875  on 215  degrees of freedom
## Residual deviance: 1164302500  on 212  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3971
##
## Number of Fisher Scoring iterations: 2

lm_HEL_PEK3 <- lm(data$HEL_PEK_30~data$t+data$X2003_SARS+data$X2005_FLU)
summary(lm_HEL_PEK3)

```

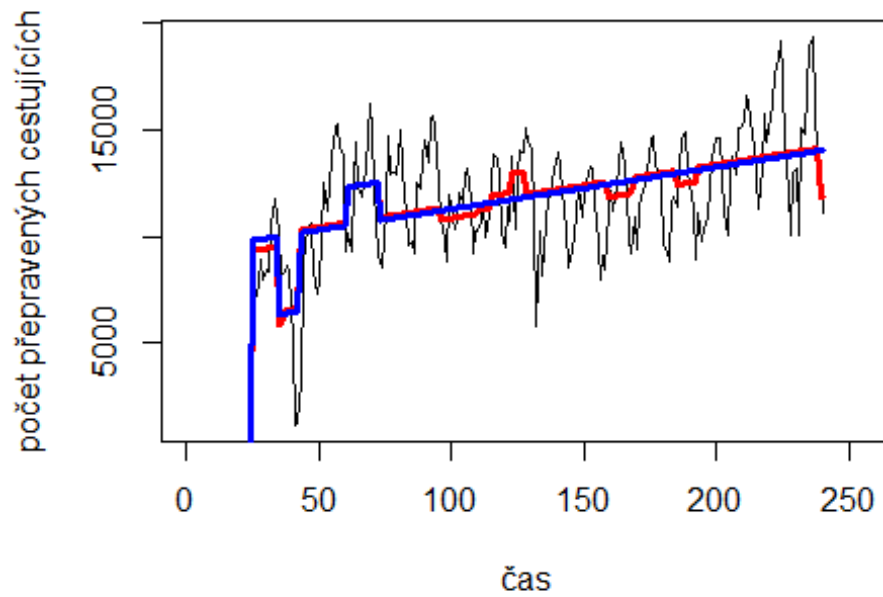
```

##
## Call:
## lm(formula = data$HEL_PEK_30 ~ data$t + data$X2003_SARS + data$X2005_FLU)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -7088.2 -1523.5    27.3  1796.5  5425.5
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9315.707    426.149   21.860 < 2e-16 ***
## data$t         19.676      2.792    7.048 2.51e-11 ***
## data$X2003_SARS -3682.894    891.858  -4.129 5.23e-05 ***
## data$X2005_FLU  1791.898    726.790   2.465  0.0145 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2344 on 212 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.3108, Adjusted R-squared:  0.301
## F-statistic: 31.87 on 3 and 212 DF,  p-value: < 2.2e-16

plot(data$HEL_PEK_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="HEL-PEK")
fit <- c(rep(0, 24), lm_HEL_PEK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_HEL_PEK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

HEL-PEK

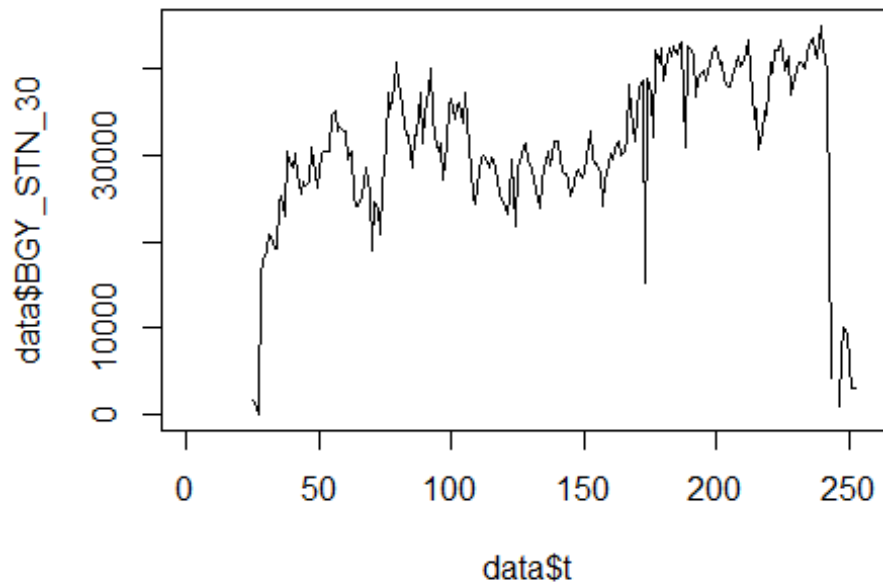


Spojení letiště

Bergamo -> letiště Stansted

```
data$BGY_STN_30 <- data$BGY_STN/data$days * 30
```

```
plot(data$BGY_STN_30~data$t, t="l")
```

```
lm_BGY_STN1 <- glm(data$BGY_STN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_BGY_STN1)

##
## Call:
## glm(formula = data$BGY_STN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -20409  -4113   1206   3369  27737
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   24880.46   1213.88   20.497 < 2e-16 ***
## data$t         62.20      7.83    7.944 1.02e-13 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER -11297.49   2092.48  -5.399 1.74e-07 ***
## data$X2008_FC    998.22   1588.00   0.629 0.53027
## data$X2009_SF  -4880.19   1864.74  -2.617 0.00949 **
## data$X2010_ER   262.85   3385.51   0.078 0.93818
## data$X2019_CV -22522.10   2067.41 -10.894 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 40549629)
```

```

##
## Null deviance: 1.7927e+10 on 225 degrees of freedom
## Residual deviance: 8.8804e+09 on 219 degrees of freedom
## (30 observations deleted due to missingness)
## AIC: 4609.3
##
## Number of Fisher Scoring iterations: 2

lm_BGY_STN2 <- glm(data$BGY_STN_30~data$t+data$X2001_TER+data$X2009_SF+data$X
2019_CV)
summary(lm_BGY_STN2)

##
## Call:
## glm(formula = data$BGY_STN_30 ~ data$t + data$X2001_TER + data$X2009_SF +
## data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -20462 -3938 1233 3353 27731
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 25077.133 1168.538 21.460 < 2e-16 ***
## data$t 61.377 7.689 7.982 7.79e-14 ***
## data$X2001_TER -11468.916 2067.074 -5.548 8.21e-08 ***
## data$X2009_SF -4683.085 1574.251 -2.975 0.00326 **
## data$X2019_CV -22515.386 2059.814 -10.931 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 40255189)
##
## Null deviance: 1.7927e+10 on 225 degrees of freedom
## Residual deviance: 8.8964e+09 on 221 degrees of freedom
## (30 observations deleted due to missingness)
## AIC: 4605.7
##
## Number of Fisher Scoring iterations: 2

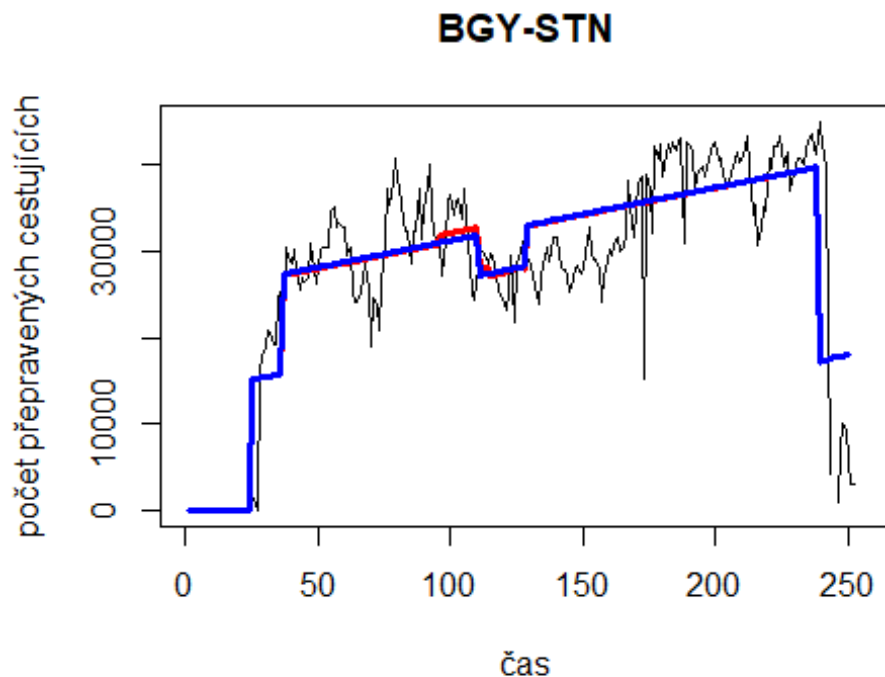
lm_BGY_STN3 <- lm(data$BGY_STN_30~data$t+data$X2001_TER+data$X2009_SF+data$X2
019_CV)
summary(lm_BGY_STN3)

##
## Call:
## lm(formula = data$BGY_STN_30 ~ data$t + data$X2001_TER + data$X2009_SF +
## data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max

```

```
## -20462 -3938 1233 3353 27731
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  25077.133   1168.538   21.460 < 2e-16 ***
## data$t       61.377      7.689    7.982 7.79e-14 ***
## data$X2001_TER -11468.916  2067.074  -5.548 8.21e-08 ***
## data$X2009_SF  -4683.085  1574.251  -2.975 0.00326 **
## data$X2019_CV -22515.386  2059.814 -10.931 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 6345 on 221 degrees of freedom
## (30 observations deleted due to missingness)
## Multiple R-squared:  0.5037, Adjusted R-squared:  0.4948
## F-statistic: 56.08 on 4 and 221 DF, p-value: < 2.2e-16

plot(data$BGY_STN_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
      main = "BGY-STN")
fit <- c(rep(0, 24), lm_BGY_STN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_BGY_STN2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

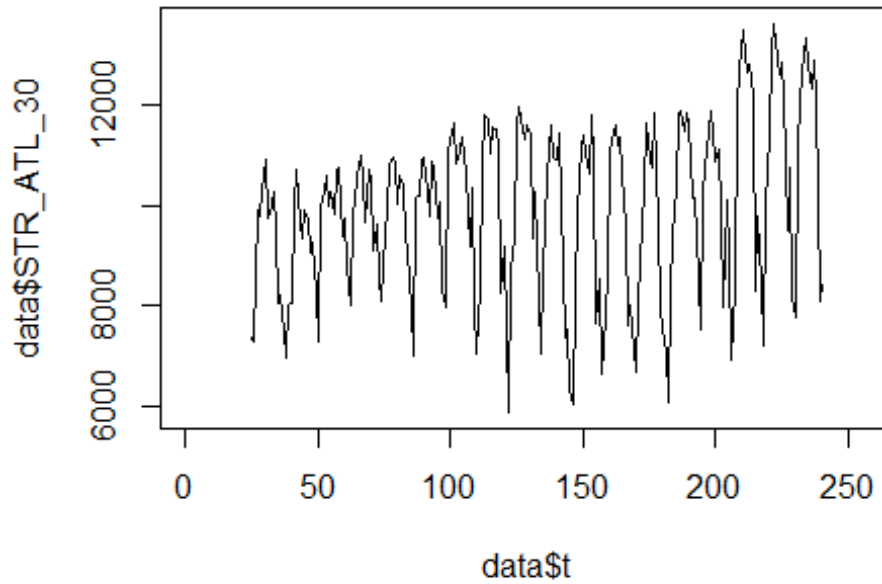


Stuttgart -> letiště Atlanta

Spojení letiště

```
data$STR_ATL_30 <- data$STR_ATL/data$days * 30
```

```
plot(data$STR_ATL_30~data$t, t="l")
```



```
lm_STR_ATL1 <- glm(data$STR_ATL_30~data$t+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012_MERS+data$X2019_CV)
summary(lm_STR_ATL1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$STR_ATL_30 ~ data$t + data$X2001_TER + data$X2003_SARS +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2012_MERS +
##      data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
## -4179.3 -1039.3   390.1  1183.5  3108.8
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9070.156   327.636  27.684 < 2e-16 ***
## data$t         6.577     2.110   3.117 0.00209 **
## data$X2001_TER 161.352   535.679  0.301 0.76356
## data$X2003_SARS -916.701   620.029 -1.478 0.14080
## data$X2008_FC  363.104   408.133  0.890 0.37467
## data$X2009_SF   63.665   477.877  0.133 0.89415
```

```

## data$X2010_ER      695.409      866.081      0.803      0.42293
## data$X2012_MERS    861.823      598.120      1.441      0.15113
## data$X2019_CV     -2390.935     1176.927     -2.032     0.04348 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 2653406)
##
## Null deviance: 616490190 on 215 degrees of freedom
## Residual deviance: 549255133 on 207 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3818.7
##
## Number of Fisher Scoring iterations: 2

lm_STR_ATL2 <- glm(data$STR_ATL_30~data$t+data$X2019_CV)
summary(lm_STR_ATL2)

##
## Call:
## glm(formula = data$STR_ATL_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -4280.9  -1181.2   424.1  1234.1  2974.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9024.675    262.058  34.438 < 2e-16 ***
## data$t         7.385      1.804   4.094 6.01e-05 ***
## data$X2019_CV -2539.090   1174.248  -2.162  0.0317 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 2656987)
##
## Null deviance: 616490190 on 215 degrees of freedom
## Residual deviance: 565938299 on 213 degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 3813.2
##
## Number of Fisher Scoring iterations: 2

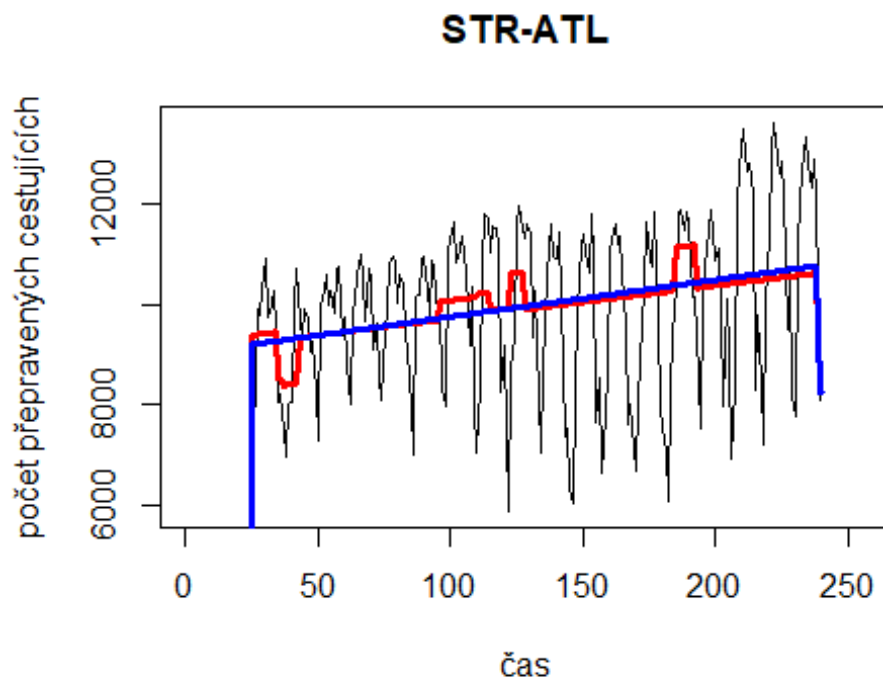
lm_STR_ATL3 <- lm(data$STR_ATL_30~data$t+data$X2019_CV)
summary(lm_STR_ATL3)

##
## Call:
## lm(formula = data$STR_ATL_30 ~ data$t + data$X2019_CV)
##
## Residuals:

```

```
##      Min      1Q  Median      3Q      Max
## -4280.9 -1181.2  424.1  1234.1  2974.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   9024.675    262.058   34.438 < 2e-16 ***
## data$t         7.385      1.804    4.094 6.01e-05 ***
## data$X2019_CV -2539.090   1174.248  -2.162  0.0317 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1630 on 213 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.082, Adjusted R-squared:  0.07338
## F-statistic: 9.513 on 2 and 213 DF,  p-value: 0.0001103

plot(data$STR_ATL_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
      main = "STR-ATL")
fit <- c(rep(0, 24), lm_STR_ATL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_STR_ATL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

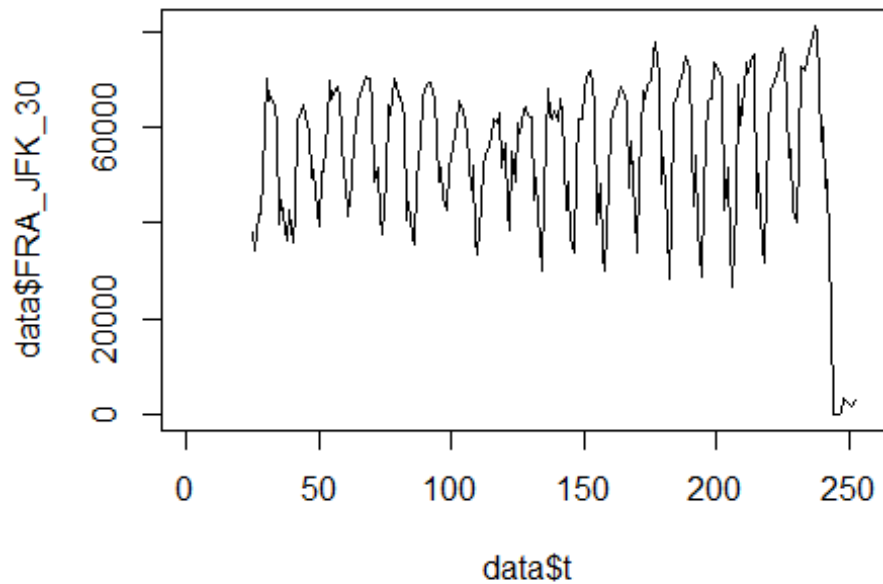


Spojení letiště

Frankfurt -> letiště John F. Kennedy

```
data$FRA_JFK_30 <- data$FRA_JFK/data$days * 30
```

```
plot(data$FRA_JFK_30~data$t, t="l")
```



```
lm_FRA_JFK1 <- glm(data$FRA_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_FRA_JFK1)
```

```
##
## Call:
## glm(formula = data$FRA_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -32867  -10440    3433   10189   42542
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    54428.24   2735.47  19.897  <2e-16 ***
## data$t          24.67     17.42   1.417  0.1580
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER  -1779.40   4481.28  -0.397  0.6917
## data$X2003_SARS -12243.27   5187.61  -2.360  0.0191 *
## data$X2008_FC   -4597.65   3413.45  -1.347  0.1794
## data$X2009_SF   -1870.84   3996.29  -0.468  0.6401
## data$X2010_ER    1697.14   7246.42   0.234  0.8150
## data$X2019_CV  -42859.06   4177.93 -10.258  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 185761892)
##
## Null deviance: 6.3590e+10 on 227 degrees of freedom
## Residual deviance: 4.0868e+10 on 220 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4998
##
## Number of Fisher Scoring iterations: 2

lm_FRA_JFK2 <- glm(data$FRA_JFK_30~data$t+data$X2003_SARS+data$X2019_CV)
summary(lm_FRA_JFK2)

##
## Call:
## glm(formula = data$FRA_JFK_30 ~ data$t + data$X2003_SARS + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -32706 -10714 2811 10741 42579
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 52895.98 2326.65 22.735 <2e-16 ***
## data$t 31.33 15.73 1.992 0.0476 *
## data$X2003_SARS -11412.18 5123.94 -2.227 0.0269 *
## data$X2019_CV -42961.29 4133.06 -10.395 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 184395663)
##
## Null deviance: 6.3590e+10 on 227 degrees of freedom
## Residual deviance: 4.1305e+10 on 224 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4992.4
##
## Number of Fisher Scoring iterations: 2

lm_FRA_JFK3 <- lm(data$FRA_JFK_30~data$t+data$X2003_SARS+data$X2019_CV)
summary(lm_FRA_JFK3)

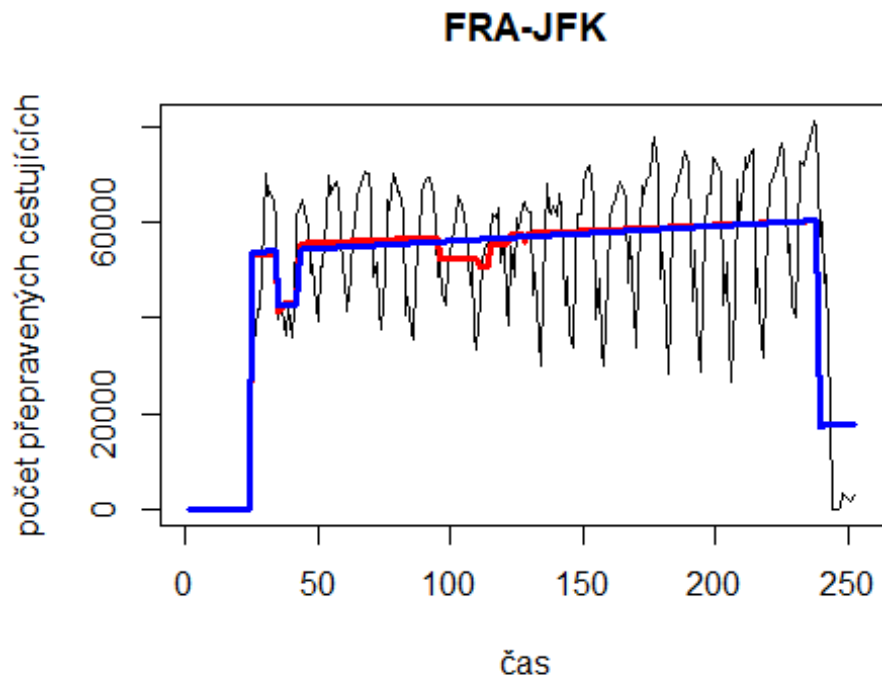
##
## Call:
## lm(formula = data$FRA_JFK_30 ~ data$t + data$X2003_SARS + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -32706 -10714 2811 10741 42579
##
## Coefficients:

```



```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   52895.98   2326.65  22.735 <2e-16 ***
## data$t        31.33     15.73   1.992  0.0476 *
## data$X2003_SARS -11412.18   5123.94  -2.227  0.0269 *
## data$X2019_CV  -42961.29   4133.06 -10.395 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 13580 on 224 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.3505, Adjusted R-squared:  0.3418
## F-statistic: 40.29 on 3 and 224 DF,  p-value: < 2.2e-16

plot(data$FRA_JFK_30, type="l",xlab="čas",ylab="počet přepravených cestujících h",main="FRA-JFK")
fit <- c(rep(0, 24), lm_FRA_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_FRA_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

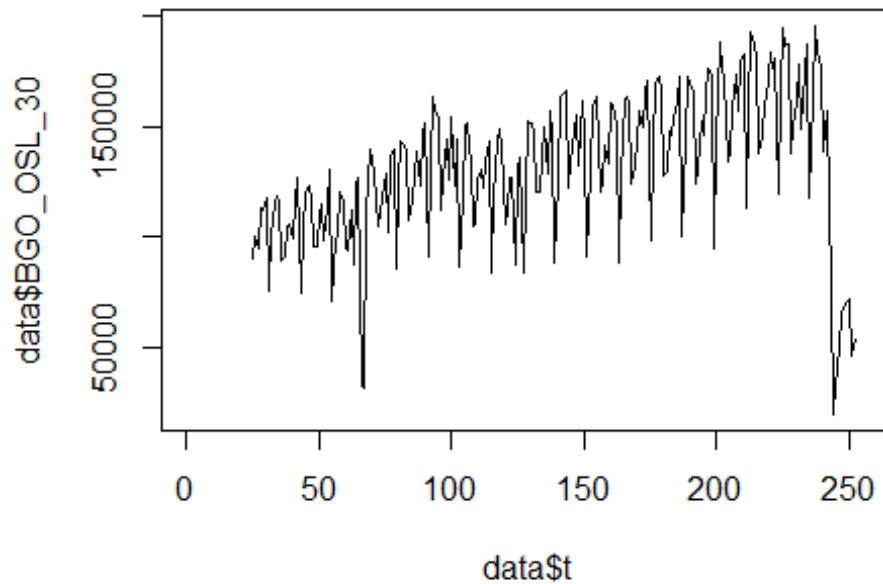


Spojení letiště

Bergen -> letiště Oslo

```
data$BGO_OSL_30 <- data$BGO_OSL/data$days * 30
```

```
plot(data$BGO_OSL_30~data$t, t="l")
```



```
lm_BGO_OSL1 <- glm(data$BGO_OSL_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_BGO_OSL1)

##
## Call:
## glm(formula = data$BGO_OSL_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -82881  -13709   1666   16973   95306
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   92150.41    4689.65  19.650  <2e-16 ***
## data$t        325.95      30.25   10.775  <2e-16 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER   1468.71    8084.04   0.182   0.856
## data$X2008_FC   3067.30    6135.04   0.500   0.618
## data$X2009_SF  -6010.14    7204.18  -0.834   0.405
## data$X2010_ER -14121.91   13079.46  -1.080   0.281
## data$X2019_CV -88403.75    7520.51 -11.755  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 605228508)
```

```

##
## Null deviance: 2.5589e+11 on 227 degrees of freedom
## Residual deviance: 1.3376e+11 on 221 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5266.3
##
## Number of Fisher Scoring iterations: 2

lm_BGO_OSL2 <- glm(data$BGO_OSL_30~data$t+data$X2019_CV)
summary(lm_BGO_OSL2)

##
## Call:
## glm(formula = data$BGO_OSL_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -82524 -13442 2224 17305 95293
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 91921.92 3955.86 23.24 <2e-16 ***
## data$t 324.03 27.23 11.90 <2e-16 ***
## data$X2019_CV -87704.24 7464.58 -11.75 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 605583417)
##
## Null deviance: 2.5589e+11 on 227 degrees of freedom
## Residual deviance: 1.3626e+11 on 225 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5262.6
##
## Number of Fisher Scoring iterations: 2

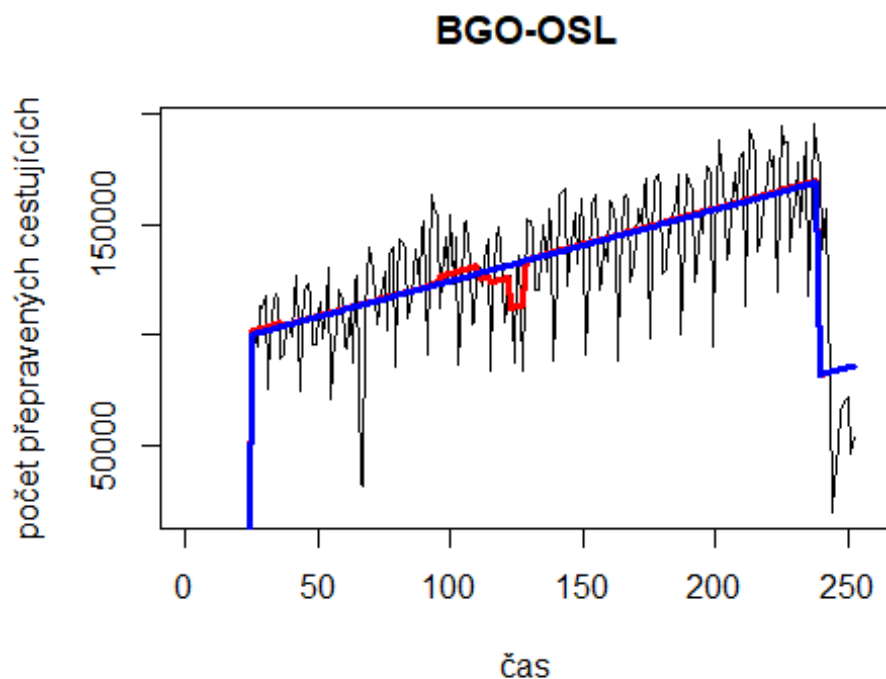
lm_BGO_OSL3 <- lm(data$BGO_OSL_30~data$t+data$X2019_CV)
summary(lm_BGO_OSL3)

##
## Call:
## lm(formula = data$BGO_OSL_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -82524 -13442 2224 17305 95293
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 91921.92 3955.86 23.24 <2e-16 ***
## data$t 324.03 27.23 11.90 <2e-16 ***

```

```
## data$X2019_CV -87704.24    7464.58   -11.75   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 24610 on 225 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.4675, Adjusted R-squared:  0.4628
## F-statistic: 98.78 on 2 and 225 DF,  p-value: < 2.2e-16

plot(data$BGO_OSL_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "BGO-OSL")
fit <- c(rep(0, 24), lm_BGO_OSL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_BGO_OSL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

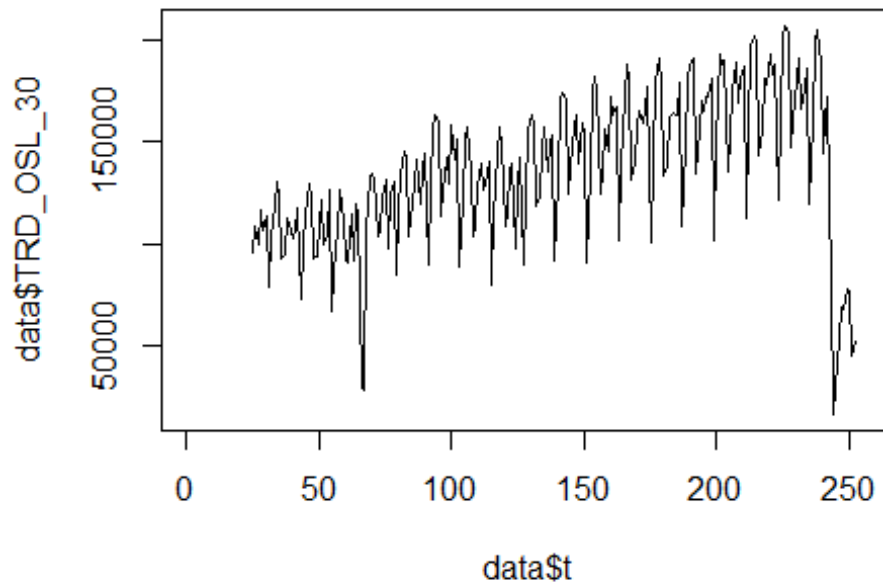


Spojení letiště

Trondheim -> letiště Oslo

```
data$TRD_OSL_30 <- data$TRD_OSL/data$days * 30

plot(data$TRD_OSL_30~data$t, t="l")
```



```
lm_TRD_OSL1 <- glm(data$TRD_OSL_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_TRD_OSL1)

##
## Call:
## glm(formula = data$TRD_OSL_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -85514  -14545   3565   17703  102196
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    87126.58    5011.42  17.386  <2e-16 ***
## data$t         397.35      32.33   12.292  <2e-16 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER    8120.67    8638.70   0.940   0.348
## data$X2008_FC    3786.31    6555.98   0.578   0.564
## data$X2009_SF   -7230.56    7698.48  -0.939   0.349
## data$X2010_ER  -10317.07   13976.87  -0.738   0.461
## data$X2019_CV  -96652.54    8036.52 -12.027  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 691130264)
```

```

##
## Null deviance: 3.1153e+11 on 227 degrees of freedom
## Residual deviance: 1.5274e+11 on 221 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5296.6
##
## Number of Fisher Scoring iterations: 2

lm_TRD_OSL2 <- glm(data$TRD_OSL_30~data$t+data$X2019_CV)
summary(lm_TRD_OSL2)

##
## Call:
## glm(formula = data$TRD_OSL_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -86235 -14531 4178 17103 102117
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 88654.7 4228.5 20.97 <2e-16 ***
## data$t 385.3 29.1 13.24 <2e-16 ***
## data$X2019_CV -95220.0 7979.0 -11.93 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 691929919)
##
## Null deviance: 3.1153e+11 on 227 degrees of freedom
## Residual deviance: 1.5568e+11 on 225 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5293
##
## Number of Fisher Scoring iterations: 2

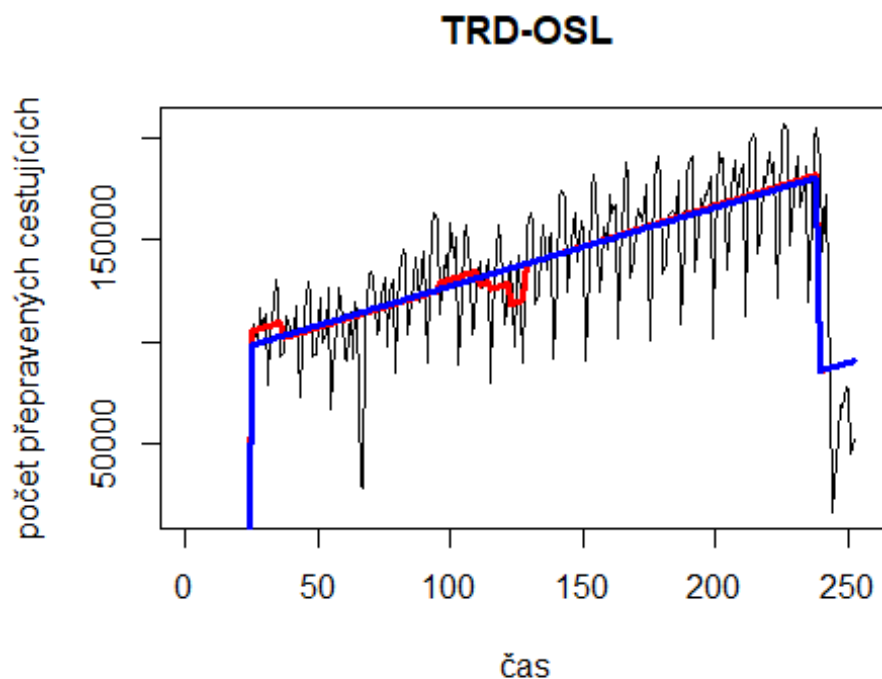
lm_TRD_OSL3 <- lm(data$TRD_OSL_30~data$t+data$X2019_CV)
summary(lm_TRD_OSL3)

##
## Call:
## lm(formula = data$TRD_OSL_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -86235 -14531 4178 17103 102117
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 88654.7 4228.5 20.97 <2e-16 ***
## data$t 385.3 29.1 13.24 <2e-16 ***

```

```
## data$X2019_CV -95220.0      7979.0  -11.93  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 26300 on 225 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.5003, Adjusted R-squared:  0.4958
## F-statistic: 112.6 on 2 and 225 DF,  p-value: < 2.2e-16

plot(data$TRD_OSL_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "TRD-OSL")
fit <- c(rep(0, 24), lm_TRD_OSL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_TRD_OSL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

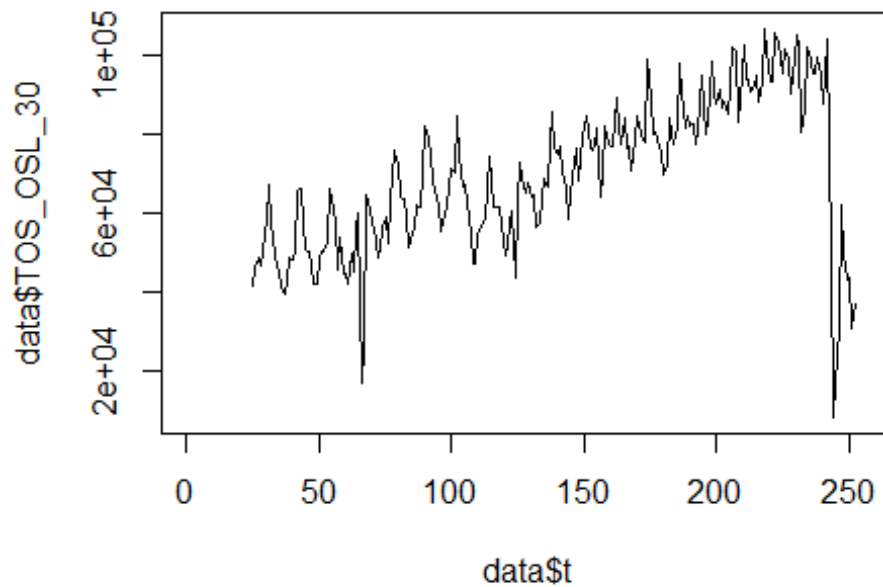


Spojení letiště

Tromso -> letiště Oslo

```
data$TOS_OSL_30 <- data$TOS_OSL/data$days * 30
```

```
plot(data$TOS_OSL_30~data$t, t="l")
```



```
lm_TOS_OSL1 <- glm(data$TOS_OSL_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_TOS_OSL1)
```

```
##
## Call:
## glm(formula = data$TOS_OSL_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -45025  -4919    -297    4864   51189
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   38147.23   2122.32  17.974 <2e-16 ***
## data$t         250.86     13.69  18.325 <2e-16 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER   4218.98   3658.45   1.153  0.2501
## data$X2008_FC  -413.33   2776.43  -0.149  0.8818
## data$X2009_SF -7371.92   3260.27  -2.261  0.0247 *
## data$X2010_ER -1108.41   5919.14  -0.187  0.8516
## data$X2019_CV -46018.04   3403.43 -13.521 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 123953107)
```



```

##
## Null deviance: 8.2208e+10 on 227 degrees of freedom
## Residual deviance: 2.7394e+10 on 221 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4904.8
##
## Number of Fisher Scoring iterations: 2

lm_TOS_OSL2 <- glm(data$TOS_OSL_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_TOS_OSL2)

##
## Call:
## glm(formula = data$TOS_OSL_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -45034 -4907 -309 4550 51168
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 39189.1 1812.9 21.616 <2e-16 ***
## data$t 244.7 12.3 19.901 <2e-16 ***
## data$X2009_SF -8078.9 2737.2 -2.951 0.0035 **
## data$X2019_CV -45550.7 3368.6 -13.522 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 123093350)
##
## Null deviance: 8.2208e+10 on 227 degrees of freedom
## Residual deviance: 2.7573e+10 on 224 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4900.3
##
## Number of Fisher Scoring iterations: 2

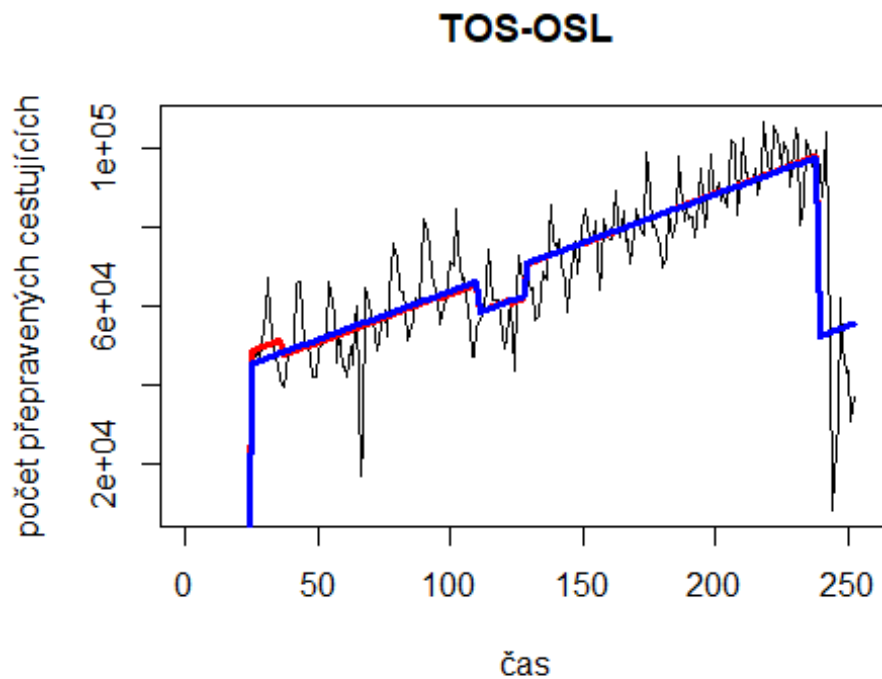
lm_TOS_OSL3 <- lm(data$TOS_OSL_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_TOS_OSL3)

##
## Call:
## lm(formula = data$TOS_OSL_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -45034 -4907 -309 4550 51168
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 39189.1 1812.9 21.616 <2e-16 ***

```

```
## data$t          244.7      12.3  19.901  <2e-16 ***
## data$X2009_SF  -8078.9    2737.2  -2.951  0.0035 **
## data$X2019_CV -45550.7   3368.6 -13.522  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11090 on 224 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.6646, Adjusted R-squared:  0.6601
## F-statistic: 148 on 3 and 224 DF, p-value: < 2.2e-16

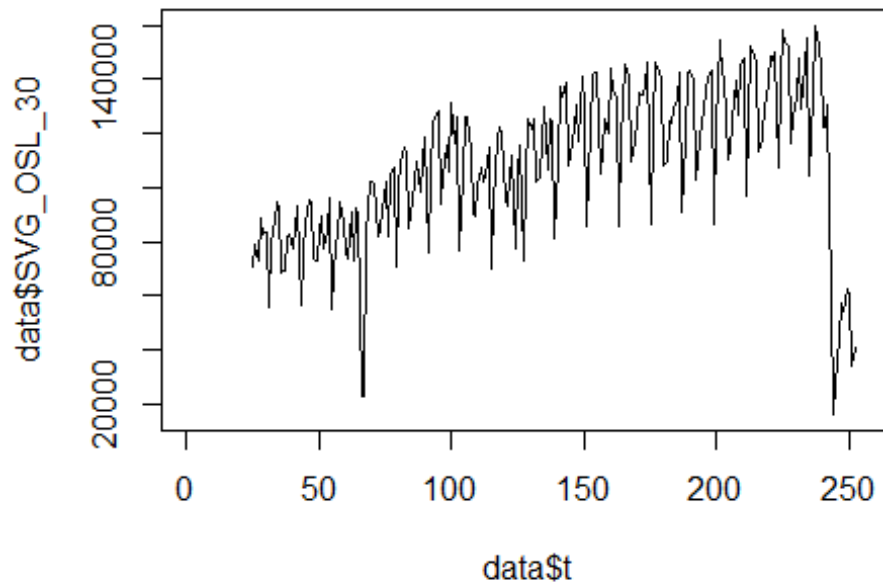
plot(data$TOS_OSL_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "TOS-OSL")
fit <- c(rep(0, 24), lm_TOS_OSL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_TOS_OSL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Stavanger -> letiště Oslo

```
data$SVG_OSL_30 <- data$SVG_OSL/data$days * 30
plot(data$SVG_OSL_30~data$t, t="l")
```



```
lm_SVG_OSL1 <- glm(data$SVG_OSL_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_SVG_OSL1)
```

```
##
## Call:
## glm(formula = data$SVG_OSL_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -67618  -10077   1525   12054   77577
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   69552.56    3713.29   18.731  <2e-16 ***
## data$t         315.02      23.95    13.152  <2e-16 ***
## data$X2001_FC          NA          NA         NA      NA
## data$X2001_TER    809.87    6400.98   0.127   0.899
## data$X2008_FC   6164.17    4857.76   1.269   0.206
## data$X2009_SF  -4579.33    5704.31  -0.803   0.423
## data$X2010_ER  -7681.40   10356.39  -0.742   0.459
## data$X2019_CV -77057.82    5954.78 -12.940  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 379451535)
```

```

##
## Null deviance: 1.8694e+11 on 227 degrees of freedom
## Residual deviance: 8.3859e+10 on 221 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5159.9
##
## Number of Fisher Scoring iterations: 2

lm_SVG_OSL2 <- glm(data$SVG_OSL_30~data$t+data$X2019_CV)
summary(lm_SVG_OSL2)

##
## Call:
## glm(formula = data$SVG_OSL_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -67874 -10315 1656 12240 77554
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 70038.81 3131.36 22.37 <2e-16 ***
## data$t 311.54 21.55 14.46 <2e-16 ***
## data$X2019_CV -76688.65 5908.77 -12.98 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 379453044)
##
## Null deviance: 1.8694e+11 on 227 degrees of freedom
## Residual deviance: 8.5377e+10 on 225 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 5156
##
## Number of Fisher Scoring iterations: 2

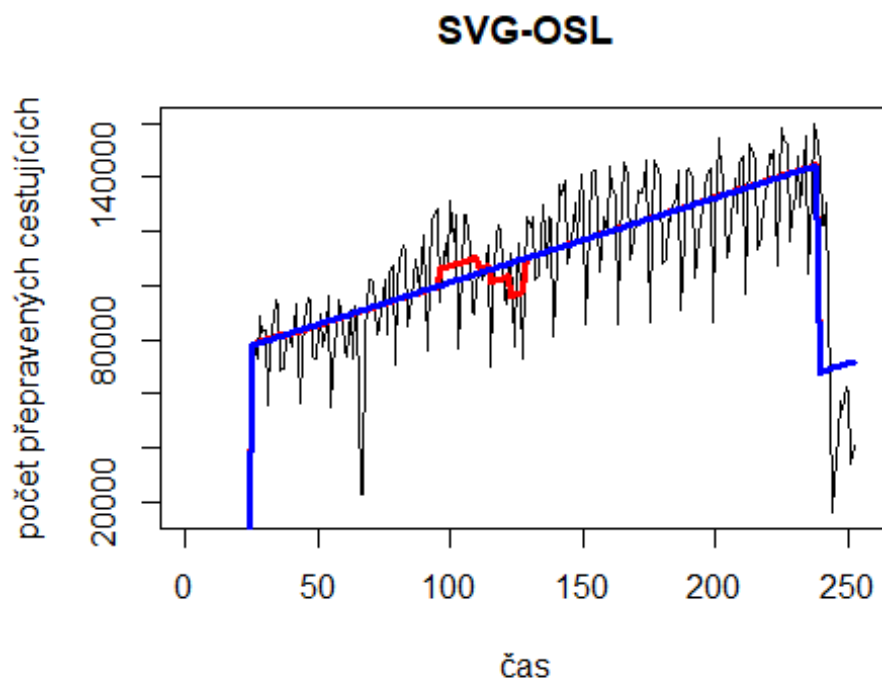
lm_SVG_OSL3 <- lm(data$SVG_OSL_30~data$t+data$X2019_CV)
summary(lm_SVG_OSL3)

##
## Call:
## lm(formula = data$SVG_OSL_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -67874 -10315 1656 12240 77554
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 70038.81 3131.36 22.37 <2e-16 ***
## data$t 311.54 21.55 14.46 <2e-16 ***

```

```
## data$X2019_CV -76688.65    5908.77  -12.98   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 19480 on 225 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.5433, Adjusted R-squared:  0.5392
## F-statistic: 133.8 on 2 and 225 DF,  p-value: < 2.2e-16

plot(data$SVG_OSL_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "SVG-OSL")
fit <- c(rep(0, 24), lm_SVG_OSL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_SVG_OSL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

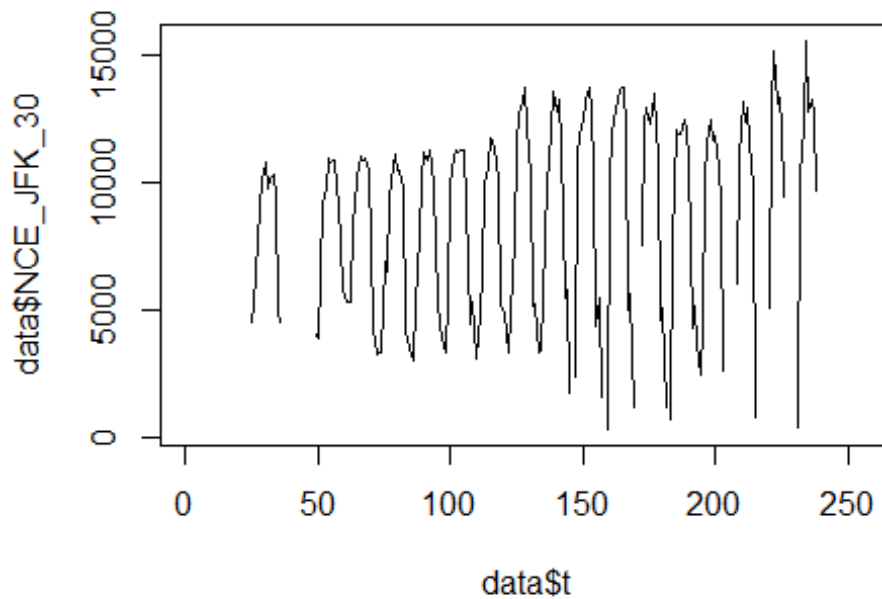


Spojení letiště

Nice -> letiště John F. Kennedy

```
data$NCE_JFK_30 <- data$NCE_JFK/data$days * 30
```

```
plot(data$NCE_JFK_30~data$t, t="l")
```



```
lm_NCE_JFK1 <- glm(data$NCE_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_NCE_JFK1)
```

```
##
## Call:
## glm(formula = data$NCE_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -9665  -3374   1503   3010   5498
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   6758.777    831.630   8.127 7.17e-14 ***
## data$t         14.217     5.388   2.639 0.00906 **
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER   1532.040   1354.459   1.131 0.25953
## data$X2003_SARS -4070.926   2859.966  -1.423 0.15637
## data$X2008_FC   -827.681    933.320  -0.887 0.37638
## data$X2009_SF     96.905   1086.378   0.089 0.92902
## data$X2010_ER   1351.589   1963.163   0.688 0.49205
## data$X2019_CV          NA          NA      NA      NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 13630603)
##
## Null deviance: 2591513119 on 184 degrees of freedom
## Residual deviance: 2426247266 on 178 degrees of freedom
## (71 observations deleted due to missingness)
## AIC: 3573
##
## Number of Fisher Scoring iterations: 2

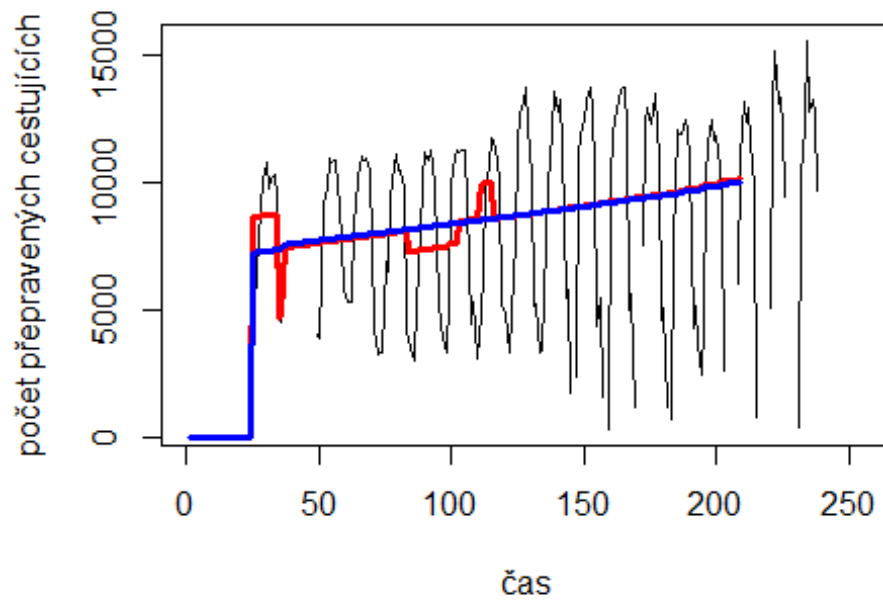
lm_NCE_JFK2 <- glm(data$NCE_JFK_30~data$t)
summary(lm_NCE_JFK2)

##
## Call:
## glm(formula = data$NCE_JFK_30 ~ data$t)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -9566 -3444 1570 2997 5600
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 6925.852 666.800 10.387 < 2e-16 ***
## data$t 13.064 4.658 2.805 0.00558 **
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 13577690)
##
## Null deviance: 2591513119 on 184 degrees of freedom
## Residual deviance: 2484717248 on 183 degrees of freedom
## (71 observations deleted due to missingness)
## AIC: 3567.4
##
## Number of Fisher Scoring iterations: 2

plot(data$NCE_JFK_30, type="l", xlab = "čas", ylab = "počet přepravených cestujíc
ích", main = "NCE-JFK")
fit <- c(rep(0, 24), lm_NCE_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_NCE_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

NCE-JFK

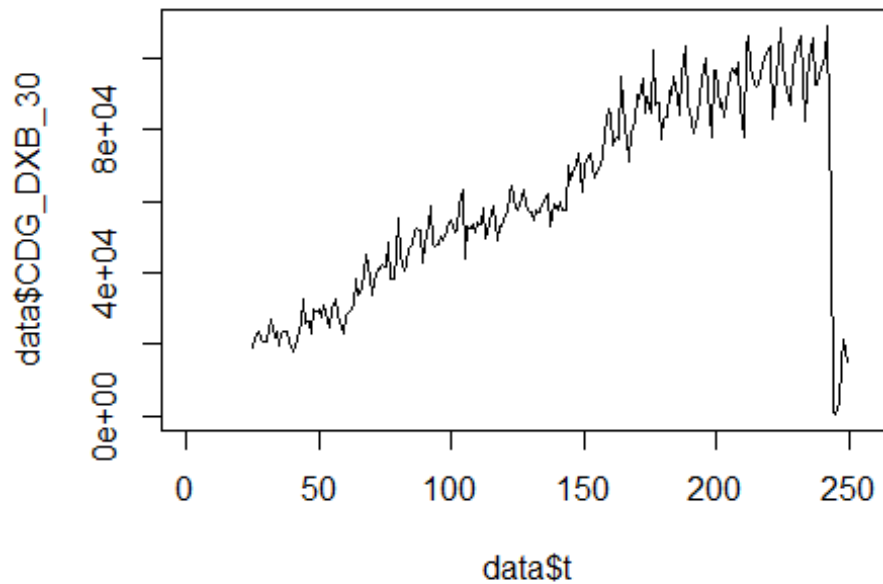


Spojení letiště

Charles de Gaulle -> letiště Dubai

```
data$CDG_DXB_30 <- data$CDG_DXB/data$days * 30
```

```
plot(data$CDG_DXB_30~data$t, t="l")
```

```
lm_CDG_DXB1 <- glm(data$CDG_DXB_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012_MERS+data$X201
9_CV)
summary(lm_CDG_DXB1)
```

```
##
## Call:
## glm(formula = data$CDG_DXB_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2012_MERS + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -46856   -3874    -292    3291   62711
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  10774.69    2373.64   4.539 9.37e-06 ***
## data$t       394.36      15.29  25.801 < 2e-16 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER    153.71    3881.12   0.040  0.968
## data$X2003_SARS  -4760.57   4492.28  -1.060  0.290
## data$X2008_FC    1297.20   2957.04   0.439  0.661
## data$X2009_SF   -2058.29   3462.37  -0.594  0.553
## data$X2010_ER    2264.78   6275.04   0.361  0.719
## data$X2012_MERS  2871.81   4333.56   0.663  0.508
## data$X2019_CV  -60024.64   3992.39 -15.035 < 2e-16 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 139289805)
##
##      Null deviance: 1.6343e+11  on 224  degrees of freedom
## Residual deviance: 3.0087e+10  on 216  degrees of freedom
## (31 observations deleted due to missingness)
## AIC: 4868.6
##
## Number of Fisher Scoring iterations: 2

lm_CDG_DXB2 <- glm(data$CDG_DXB_30~data$t+data$X2019_CV)
summary(lm_CDG_DXB2)

##
## Call:
## glm(formula = data$CDG_DXB_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -46862  -4341         0    3266   62721
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10002.02   1880.37    5.319 2.54e-07 ***
## data$t         399.73     12.94   30.886 < 2e-16 ***
## data$X2019_CV -60561.30   3898.32 -15.535 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 136813767)
##
##      Null deviance: 1.6343e+11  on 224  degrees of freedom
## Residual deviance: 3.0373e+10  on 222  degrees of freedom
## (31 observations deleted due to missingness)
## AIC: 4858.7
##
## Number of Fisher Scoring iterations: 2

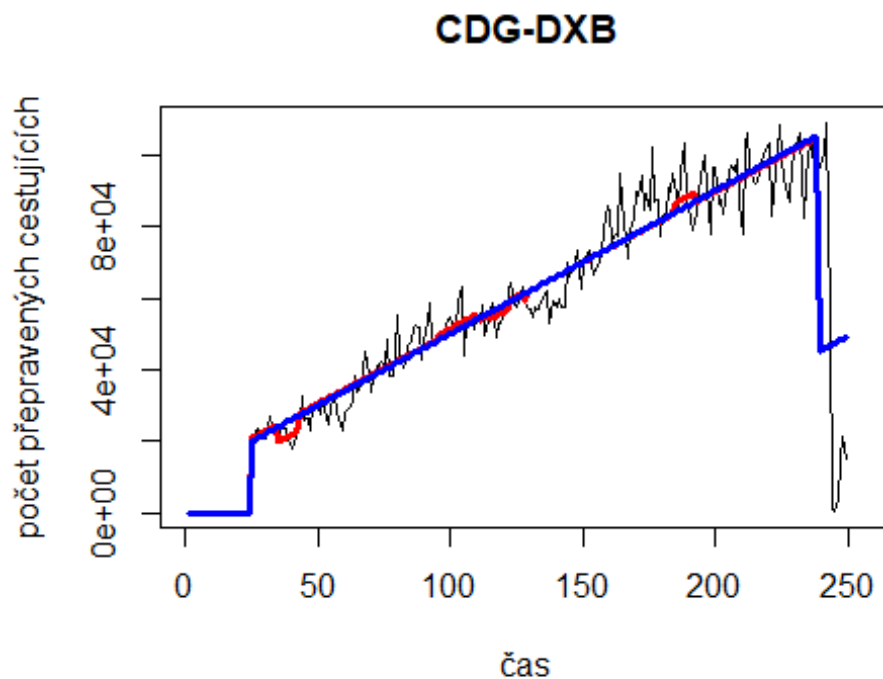
lm_CDG_DXB3 <- lm(data$CDG_DXB_30~data$t+data$X2019_CV)
summary(lm_CDG_DXB3)

##
## Call:
## lm(formula = data$CDG_DXB_30 ~ data$t + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -46862  -4341         0    3266   62721
##

```

```
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  10002.02   1880.37   5.319 2.54e-07 ***
## data$t       399.73     12.94  30.886 < 2e-16 ***
## data$X2019_CV -60561.30   3898.32 -15.535 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11700 on 222 degrees of freedom
## (31 observations deleted due to missingness)
## Multiple R-squared:  0.8142, Adjusted R-squared:  0.8125
## F-statistic: 486.3 on 2 and 222 DF,  p-value: < 2.2e-16

plot(data$CDG_DXB_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
      main = "CDG-DXB")
fit <- c(rep(0, 24), lm_CDG_DXB1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CDG_DXB2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

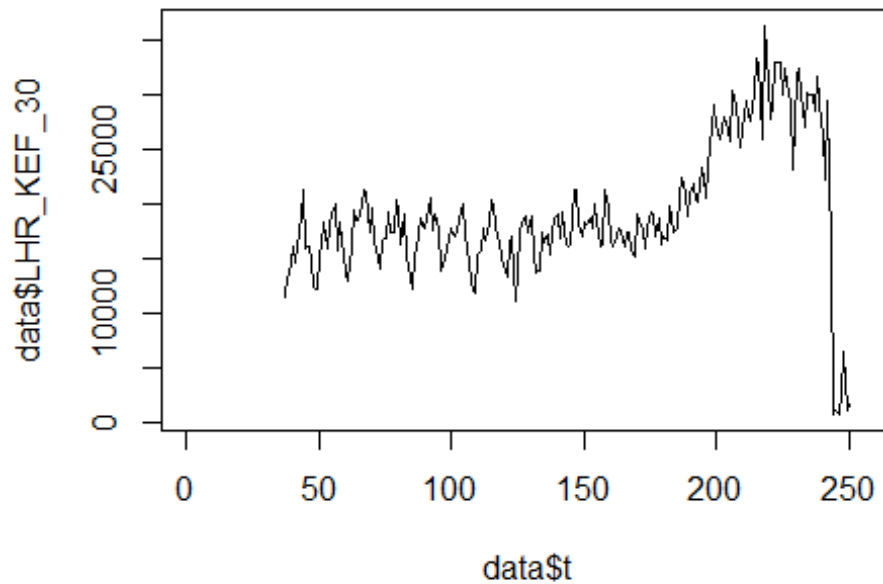


Spojení letiště

Londýn Heathrow -> letiště Keflavik

```
data$LHR_KEF_30 <- data$LHR_KEF/data$days * 30
```

```
plot(data$LHR_KEF_30~data$t, t="l")
```



```
lm_LHR_KEF1 <- glm(data$LHR_KEF_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LHR_KEF1)

##
## Call:
## glm(formula = data$LHR_KEF_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -10666.9  -3357.1   323.8   2888.5  18184.3
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   11168.303    867.473   12.875  <2e-16 ***
## data$t         65.306      5.596   11.671  <2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2008_FC  -1605.513   1134.676  -1.415   0.159
## data$X2009_SF  -1408.765   1332.408  -1.057   0.292
## data$X2010_ER  -2269.300   2419.034  -0.938   0.349
## data$X2019_CV -15727.535   1474.708 -10.665  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 20702543)
```

```

##
## Null deviance: 8382404290 on 213 degrees of freedom
## Residual deviance: 4306128946 on 208 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4220.2
##
## Number of Fisher Scoring iterations: 2

lm_LHR_KEF2 <- glm(data$LHR_KEF_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_LHR_KEF2)

##
## Call:
## glm(formula = data$LHR_KEF_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -10668.8 -3251.7 51.9 2893.4 18187.4
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 10862.305 839.228 12.943 <2e-16 ***
## data$t 66.563 5.523 12.053 <2e-16 ***
## data$X2009_SF -2240.174 1130.451 -1.982 0.0488 *
## data$X2019_CV -15728.984 1476.617 -10.652 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 20757548)
##
## Null deviance: 8382404290 on 213 degrees of freedom
## Residual deviance: 4359085073 on 210 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4218.8
##
## Number of Fisher Scoring iterations: 2

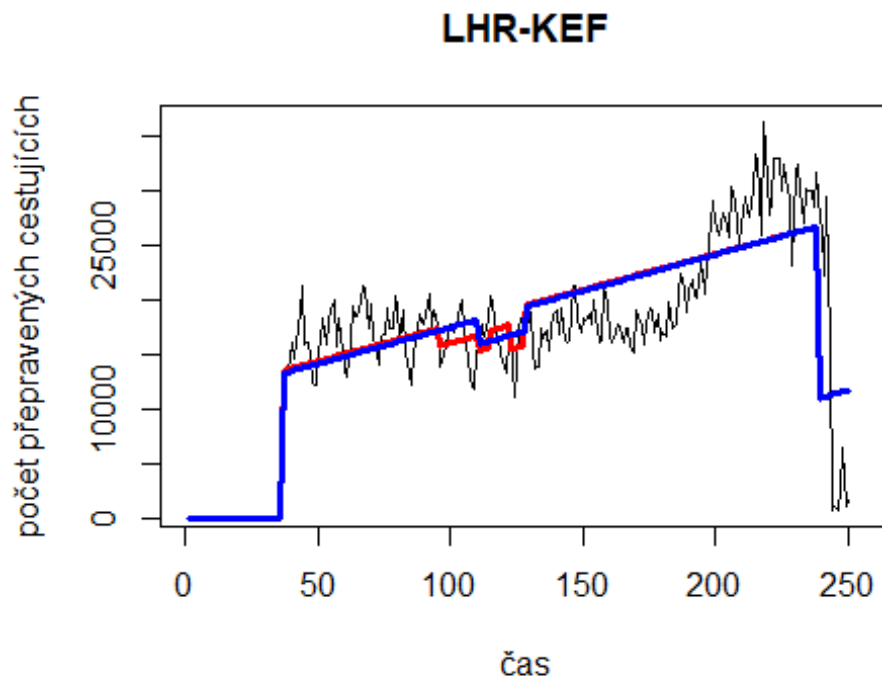
lm_LHR_KEF3 <- lm(data$LHR_KEF_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_LHR_KEF3)

##
## Call:
## lm(formula = data$LHR_KEF_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -10668.8 -3251.7 51.9 2893.4 18187.4
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 10862.305 839.228 12.943 <2e-16 ***

```

```
## data$t          66.563      5.523  12.053  <2e-16 ***
## data$X2009_SF  -2240.174  1130.451  -1.982  0.0488 *
## data$X2019_CV -15728.984  1476.617 -10.652  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4556 on 210 degrees of freedom
## (42 observations deleted due to missingness)
## Multiple R-squared:  0.48, Adjusted R-squared:  0.4725
## F-statistic: 64.61 on 3 and 210 DF,  p-value: < 2.2e-16

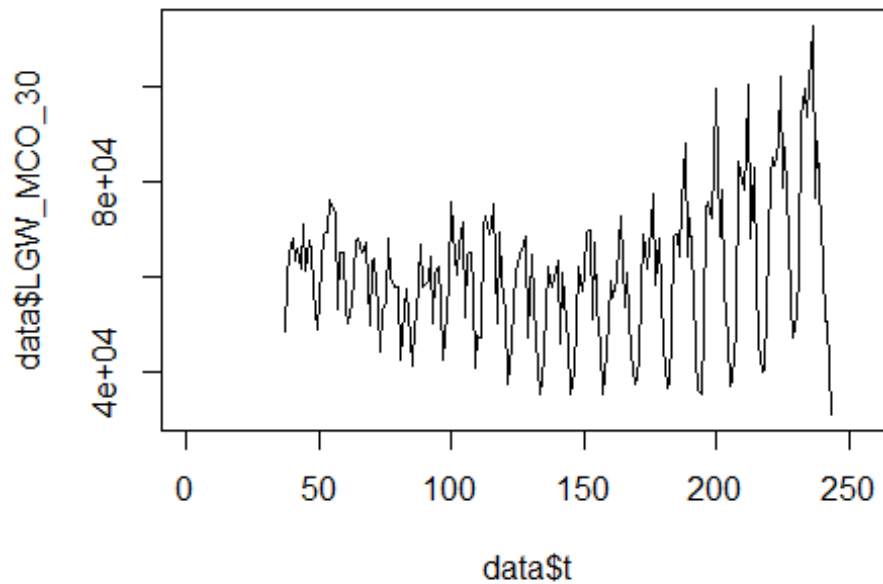
plot(data$LHR_KEF_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "LHR-KEF")
fit <- c(rep(0, 36), lm_LHR_KEF1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_LHR_KEF2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojeni 6. Evropa

- USA letiště Londýn Gatwick -> letiště Orlando

```
data$LGW_MCO_30 <- data$LGW_MCO/data$days * 30
plot(data$LGW_MCO_30~data$t, t="l")
```



```
lm_LGW_MCO1 <- glm(data$LGW_MCO_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LGW_MCO1)

##
## Call:
## glm(formula = data$LGW_MCO_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -28990  -10147    696    9417   45147
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   51317.23   2939.79  17.456 < 2e-16 ***
## data$t         68.23     18.65   3.658 0.000324 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER     NA         NA      NA      NA
## data$X2003_SARS   7695.17   6301.65   1.221 0.223472
## data$X2008_FC    1003.77   3610.24   0.278 0.781274
## data$X2009_SF     688.03   4222.26   0.163 0.870719
## data$X2010_ER    -267.12   7652.95  -0.035 0.972191
## data$X2019_CV   -14567.29   6770.89  -2.151 0.032639 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 207184126)
##
## Null deviance: 4.4566e+10 on 206 degrees of freedom
## Residual deviance: 4.1437e+10 on 200 degrees of freedom
## (49 observations deleted due to missingness)
## AIC: 4560.2
##
## Number of Fisher Scoring iterations: 2

lm_LGW_MCO2 <- glm(data$LGW_MCO_30~data$t+data$X2019_CV)
summary(lm_LGW_MCO2)

##
## Call:
## glm(formula = data$LGW_MCO_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -28928 -9444 308 9503 45537
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 52766.07 2578.18 20.466 < 2e-16 ***
## data$t 60.44 17.26 3.501 0.000569 ***
## data$X2019_CV -14138.68 6718.63 -2.104 0.036568 *
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 204673183)
##
## Null deviance: 4.4566e+10 on 206 degrees of freedom
## Residual deviance: 4.1753e+10 on 204 degrees of freedom
## (49 observations deleted due to missingness)
## AIC: 4553.8
##
## Number of Fisher Scoring iterations: 2

lm_LGW_MCO3 <- lm(data$LGW_MCO_30~data$t+data$X2019_CV)
summary(lm_LGW_MCO3)

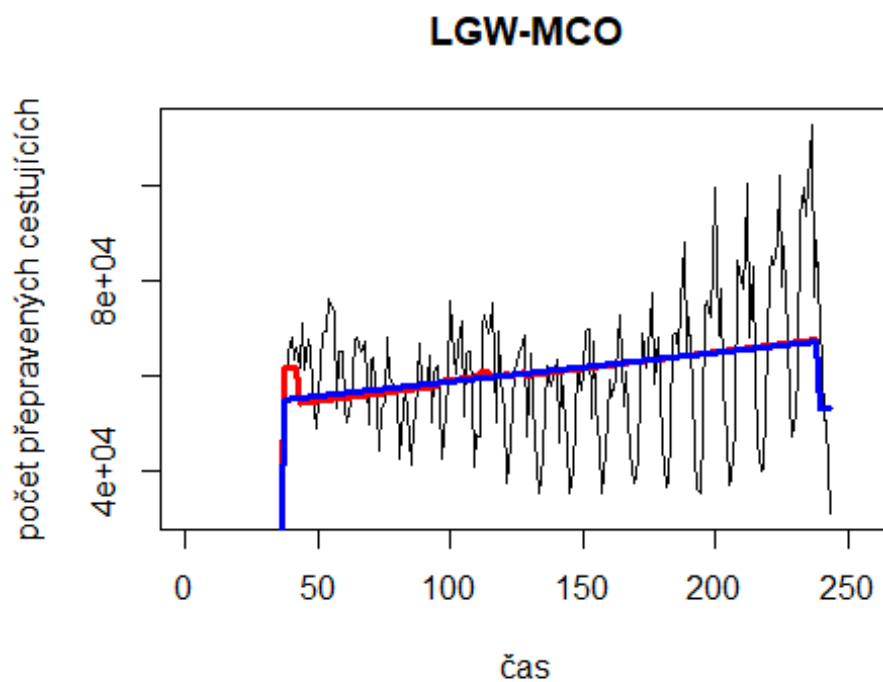
##
## Call:
## lm(formula = data$LGW_MCO_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -28928 -9444 308 9503 45537
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)

```



```
## (Intercept)    52766.07    2578.18    20.466 < 2e-16 ***
## data$t         60.44        17.26     3.501 0.000569 ***
## data$X2019_CV -14138.68    6718.63    -2.104 0.036568 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 14310 on 204 degrees of freedom
## (49 observations deleted due to missingness)
## Multiple R-squared:  0.0631, Adjusted R-squared:  0.05392
## F-statistic:  6.87 on 2 and 204 DF,  p-value: 0.001296

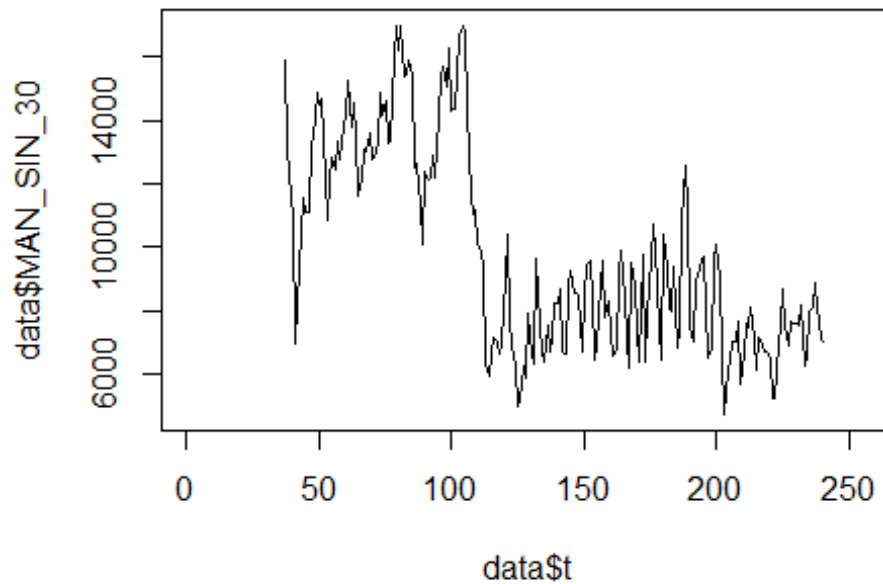
plot(data$LGW_MCO_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main="LGW-MCO")
fit <- c(rep(0, 36), lm_LGW_MCO1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_LGW_MCO2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Manchester -> letiště Singapore

```
data$MAN_SIN_30 <- data$MAN_SIN/data$days * 30
plot(data$MAN_SIN_30~data$t, t="l")
```



```
lm_MAN_SIN1 <- glm(data$MAN_SIN_30~data$t+data$X2003_SARS+data$X2005_FLU+data
$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012_MERS+data$X2013_FLU+data$X20
19_CV)
summary(lm_MAN_SIN1)
```

```
##
## Call:
## glm(formula = data$MAN_SIN_30 ~ data$t + data$X2003_SARS + data$X2005_FLU
+
##   data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2012_MERS +
##   data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -4208.5  -1169.0   111.1   1169.1  4701.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  15445.421    424.628  36.374 < 2e-16 ***
## data$t       -39.293     2.639 -14.889 < 2e-16 ***
## data$X2003_SARS -2641.744    831.245  -3.178  0.00173 **
## data$X2005_FLU   456.900    603.331   0.757  0.44979
## data$X2008_FC   2480.689    475.282   5.219  4.6e-07 ***
## data$X2009_SF  -3968.132    551.199  -7.199  1.3e-11 ***
## data$X2010_ER   -635.983    993.520  -0.640  0.52284
## data$X2012_MERS 1017.297    687.747   1.479  0.14072
## data$X2013_FLU -1083.187    613.444  -1.766  0.07901 .
```

```

## data$X2019_CV    1061.137    1352.087    0.785    0.43352
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3490476)
##
## Null deviance: 2071900873 on 203 degrees of freedom
## Residual deviance: 677152274 on 194 degrees of freedom
## (52 observations deleted due to missingness)
## AIC: 3664
##
## Number of Fisher Scoring iterations: 2

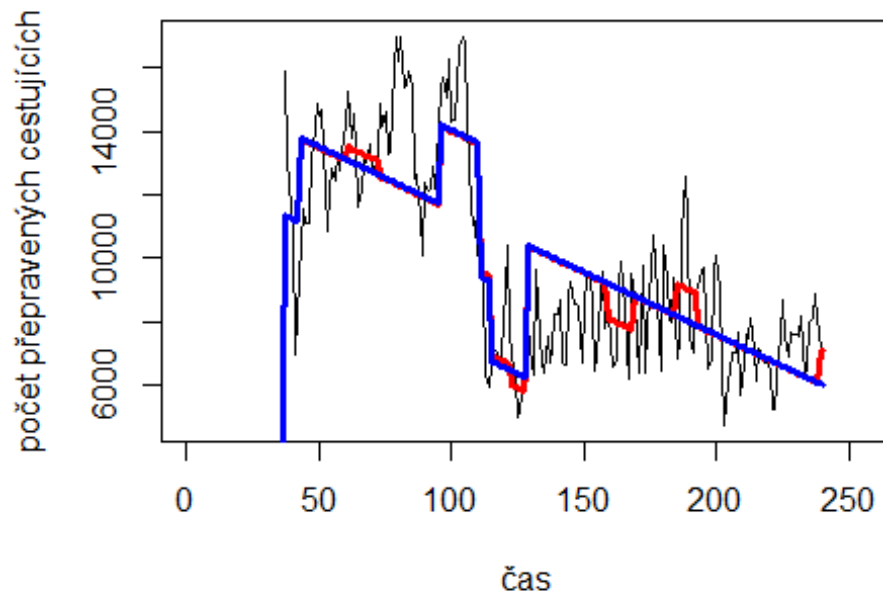
lm_MAN_SIN2 <- lm(data$MAN_SIN_30~data$t+data$X2003_SARS+data$X2008_FC+data$X
2009_SF)
summary(lm_MAN_SIN2)

##
## Call:
## lm(formula = data$MAN_SIN_30 ~ data$t + data$X2003_SARS + data$X2008_FC +
## data$X2009_SF)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -4208.3 -1187.2   82.4  1119.2  4667.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  15489.456   381.306  40.622 < 2e-16 ***
## data$t       -39.417     2.401 -16.418 < 2e-16 ***
## data$X2003_SARS -2680.879   822.490  -3.259  0.00131 **
## data$X2008_FC   2493.627   466.744   5.343 2.49e-07 ***
## data$X2009_SF  -4176.879   471.240  -8.864 4.39e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1880 on 199 degrees of freedom
## (52 observations deleted due to missingness)
## Multiple R-squared:  0.6606, Adjusted R-squared:  0.6538
## F-statistic: 96.83 on 4 and 199 DF, p-value: < 2.2e-16

plot(data$MAN_SIN_30, type="l",xlab ="čas",ylab ="počet přepravených cestujíc
ích", main = "MAN-SIN")
fit <- c(rep(0, 36), lm_MAN_SIN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_MAN_SIN2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

MAN-SIN

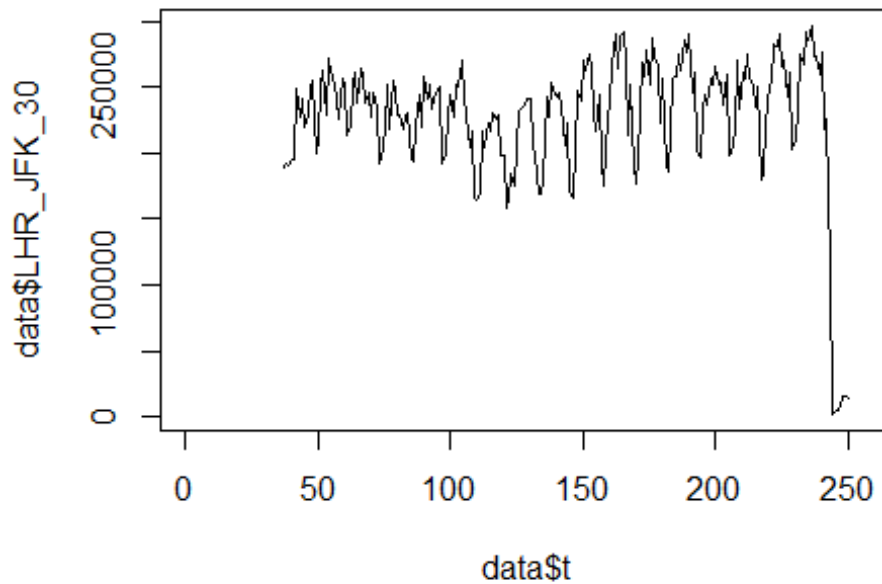


Spojení 1. Evropa

- USA letiště Londýn Heathrow -> letiště John F. Kennedy

```
data$LHR_JFK_30 <- data$LHR_JFK/data$days * 30
```

```
plot(data$LHR_JFK_30~data$t, t="l")
```



```
lm_LHR_JFK1 <- glm(data$LHR_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LHR_JFK1)
```

```
##
## Call:
## glm(formula = data$LHR_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -94455  -17374    5389   22262  180953
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   225709.07    7941.09   28.423  <2e-16 ***
## data$t         95.85       50.38    1.903  0.0585 .
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER     NA         NA      NA      NA
## data$X2003_SARS  -27670.20   17023.74  -1.625  0.1056
## data$X2008_FC   -11365.94    9753.03  -1.165  0.2452
## data$X2009_SF   -28120.07   11406.44  -2.465  0.0145 *
## data$X2010_ER   -3526.43   20674.46  -0.171  0.8647
## data$X2019_CV  -152603.45   12644.88 -12.068  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 1512055118)
##
## Null deviance: 5.6168e+11 on 213 degrees of freedom
## Residual deviance: 3.1300e+11 on 207 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 5139.5
##
## Number of Fisher Scoring iterations: 2

lm_LHR_JFK2 <- glm(data$LHR_JFK_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_LHR_JFK2)

##
## Call:
## glm(formula = data$LHR_JFK_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -94438 -24257 5870 23272 181105
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 219181.01 7173.53 30.554 < 2e-16 ***
## data$t 129.59 47.21 2.745 0.00657 **
## data$X2009_SF -29129.73 9662.84 -3.015 0.00289 **
## data$X2019_CV -154325.76 12621.79 -12.227 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1516639898)
##
## Null deviance: 5.6168e+11 on 213 degrees of freedom
## Residual deviance: 3.1849e+11 on 210 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 5137.2
##
## Number of Fisher Scoring iterations: 2

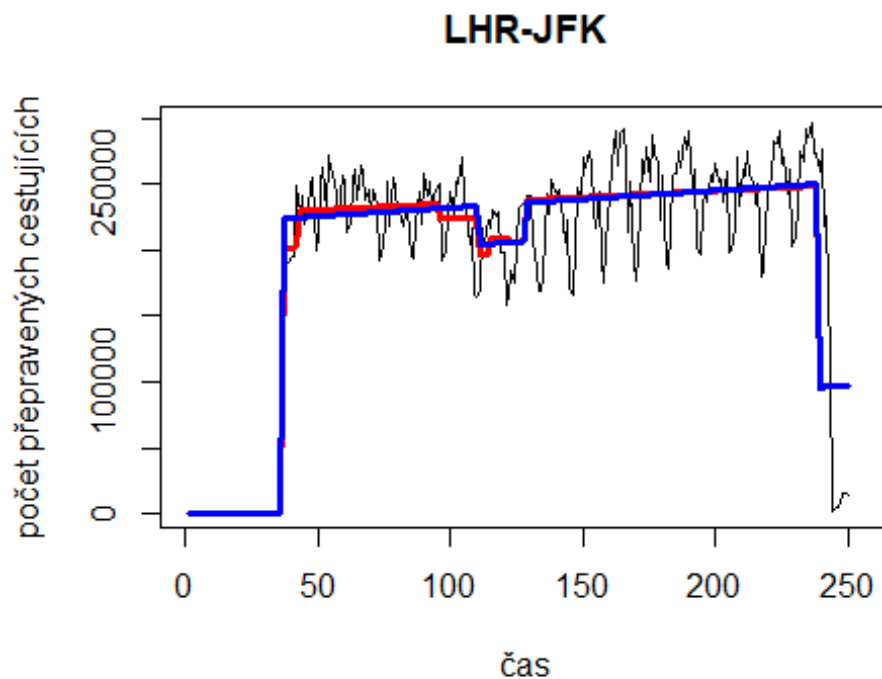
lm_LHR_JFK3 <- lm(data$LHR_JFK_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_LHR_JFK3)

##
## Call:
## lm(formula = data$LHR_JFK_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -94438 -24257 5870 23272 181105
##
## Coefficients:

```

```
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept) 219181.01   7173.53  30.554 < 2e-16 ***
## data$t      129.59     47.21   2.745  0.00657 **
## data$X2009_SF -29129.73  9662.84  -3.015  0.00289 **
## data$X2019_CV -154325.76 12621.79 -12.227 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 38940 on 210 degrees of freedom
## (42 observations deleted due to missingness)
## Multiple R-squared:  0.433, Adjusted R-squared:  0.4249
## F-statistic: 53.45 on 3 and 210 DF,  p-value: < 2.2e-16

plot(data$LHR_JFK_30, type="l",xlab="čas",ylab="počet přepravených cestujících h",main="LHR-JFK")
fit <- c(rep(0, 36), lm_LHR_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_LHR_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

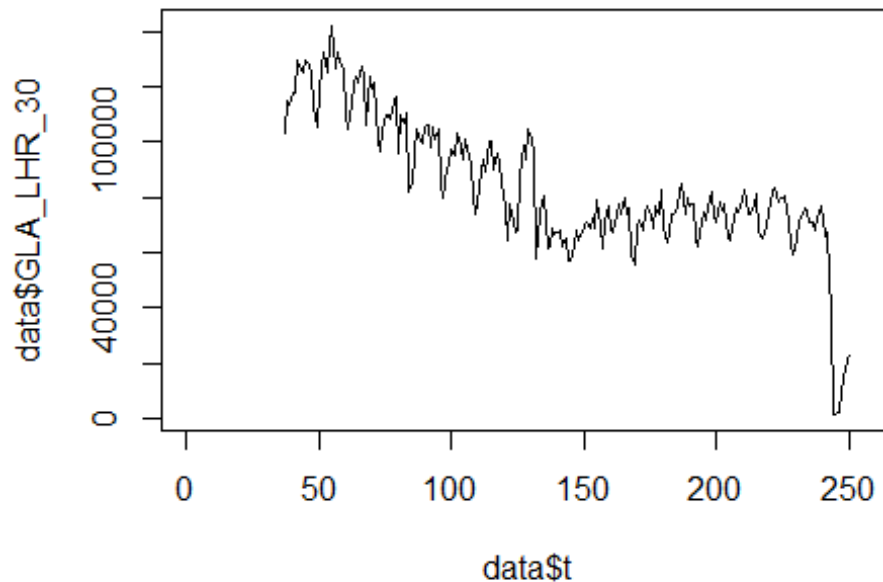


Spojení letiště

Glasgow -> letiště Londýn Heathrow

```
data$GLA_LHR_30 <- data$GLA_LHR/data$days * 30
```

```
plot(data$GLA_LHR_30~data$t, t="l")
```



```
lm_GLA_LHR1 <- glm(data$GLA_LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_GLA_LHR1)
```

```
##
## Call:
## glm(formula = data$GLA_LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -32222  -9492   1266    9365   42380
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  128925.88    2802.97  45.996 < 2e-16 ***
## data$t       -294.68     17.78 -16.572 < 2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2003_SARS  -1090.55    6008.87  -0.181  0.8562
## data$X2008_FC    -5745.56    3442.53  -1.669  0.0966 .
## data$X2009_SF    -4206.68    4026.13  -1.045  0.2973
## data$X2010_ER    -8726.32    7297.47  -1.196  0.2331
## data$X2019_CV   -24071.83    4463.27  -5.393 1.88e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



```

##
## (Dispersion parameter for gaussian family taken to be 188383859)
##
## Null deviance: 1.3025e+11 on 213 degrees of freedom
## Residual deviance: 3.8995e+10 on 207 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4693.7
##
## Number of Fisher Scoring iterations: 2

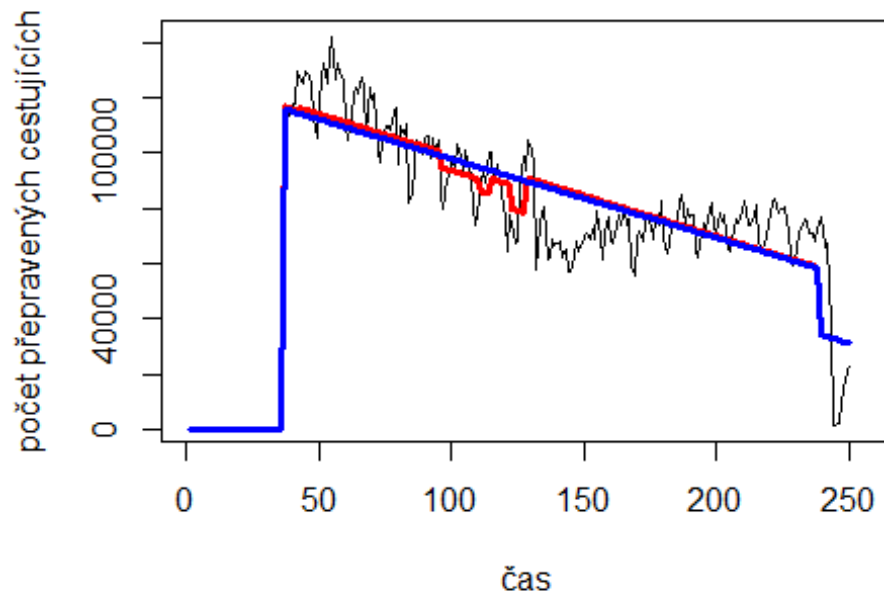
lm_GLA_LHR2 <- glm(data$GLA_LHR_30~data$t+data$X2019_CV)
summary(lm_GLA_LHR2)

##
## Call:
## glm(formula = data$GLA_LHR_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -31421 -8791 845 9337 42428
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 126541.82 2498.41 50.649 < 2e-16 ***
## data$t -285.80 16.73 -17.086 < 2e-16 ***
## data$X2019_CV -23857.85 4491.67 -5.312 2.75e-07 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 192236403)
##
## Null deviance: 1.3025e+11 on 213 degrees of freedom
## Residual deviance: 4.0562e+10 on 211 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4694.2
##
## Number of Fisher Scoring iterations: 2

plot(data$GLA_LHR_30, type="l",xlab ="čas",ylab ="počet přepravených cestujíc
ích", main = "GLA-LHR")
fit <- c(rep(0, 36), lm_GLA_LHR1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_GLA_LHR2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

GLA-LHR

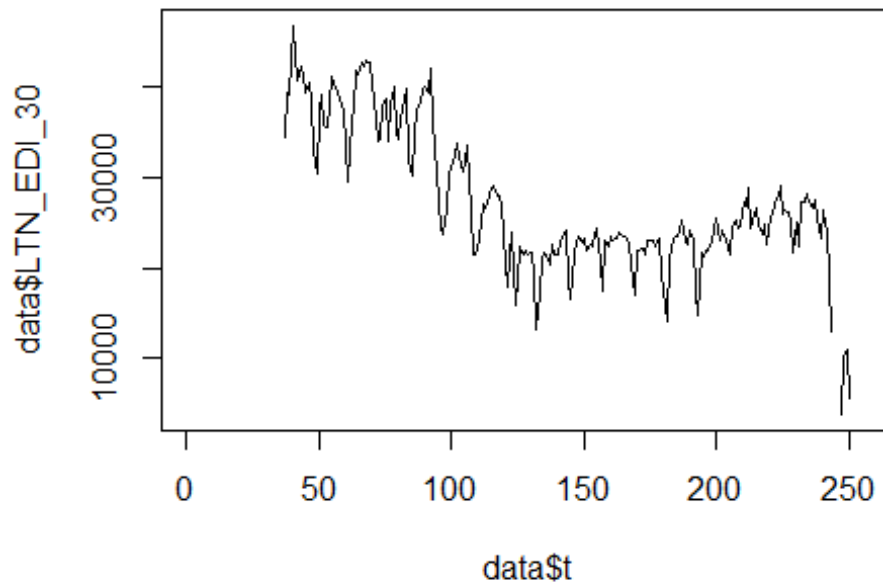


Spojení letiště

Luton -> letiště Edinburgh

```
data$LTN_EDI_30 <- data$LTN_EDI/data$days * 30
```

```
plot(data$LTN_EDI_30~data$t, t="l")
```



```
lm_LTN_ED11 <- glm(data$LTN_ED1_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LTN_ED11)

##
## Call:
## glm(formula = data$LTN_ED1_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -15896.8  -3671.4    469.8    3738.8   10188.8
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  41502.516    989.344   41.950 < 2e-16 ***
## data$t       -94.019      6.382  -14.733 < 2e-16 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER     NA           NA      NA      NA
## data$X2008_FC  -2937.424   1294.084   -2.270  0.02425 *
## data$X2009_SF  -4275.139   1519.595   -2.813  0.00538 **
## data$X2010_ER  -5023.104   2758.879   -1.821  0.07011 .
## data$X2019_CV  -2638.637   1890.861   -1.395  0.16438
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 26928064)
```

```

##
## Null deviance: 1.2964e+10 on 210 degrees of freedom
## Residual deviance: 5.5203e+09 on 205 degrees of freedom
## (45 observations deleted due to missingness)
## AIC: 4216.6
##
## Number of Fisher Scoring iterations: 2

lm_LTN_EDII2 <- glm(data$LTN_EDII_30~data$t+data$X2008_FC+data$X2009_SF)
summary(lm_LTN_EDII2)

##
## Call:
## glm(formula = data$LTN_EDII_30 ~ data$t + data$X2008_FC + data$X2009_SF)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -15784.7 -3821.8 352.6 4084.1 9201.3
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 41783.229 969.510 43.097 < 2e-16 ***
## data$t -96.995 6.036 -16.070 < 2e-16 ***
## data$X2008_FC -2612.484 1291.043 -2.024 0.0443 *
## data$X2009_SF -5667.744 1306.963 -4.337 2.26e-05 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 27348807)
##
## Null deviance: 1.2964e+10 on 210 degrees of freedom
## Residual deviance: 5.6612e+09 on 207 degrees of freedom
## (45 observations deleted due to missingness)
## AIC: 4218
##
## Number of Fisher Scoring iterations: 2

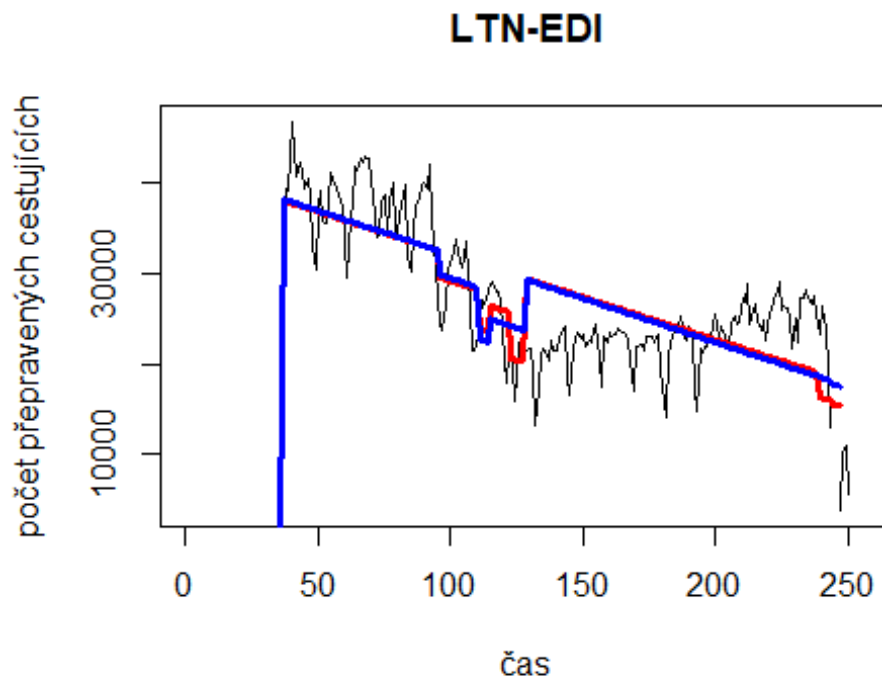
lm_LTN_EDII3 <- lm(data$LTN_EDII_30~data$t+data$X2008_FC+data$X2009_SF)
summary(lm_LTN_EDII3)

##
## Call:
## lm(formula = data$LTN_EDII_30 ~ data$t + data$X2008_FC + data$X2009_SF)
##
## Residuals:
## Min 1Q Median 3Q Max
## -15784.7 -3821.8 352.6 4084.1 9201.3
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 41783.229 969.510 43.097 < 2e-16 ***

```

```
## data$t          -96.995      6.036 -16.070 < 2e-16 ***
## data$X2008_FC  -2612.484  1291.043  -2.024  0.0443 *
## data$X2009_SF  -5667.744  1306.963  -4.337  2.26e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 5230 on 207 degrees of freedom
## (45 observations deleted due to missingness)
## Multiple R-squared:  0.5633, Adjusted R-squared:  0.557
## F-statistic: 89.01 on 3 and 207 DF,  p-value: < 2.2e-16

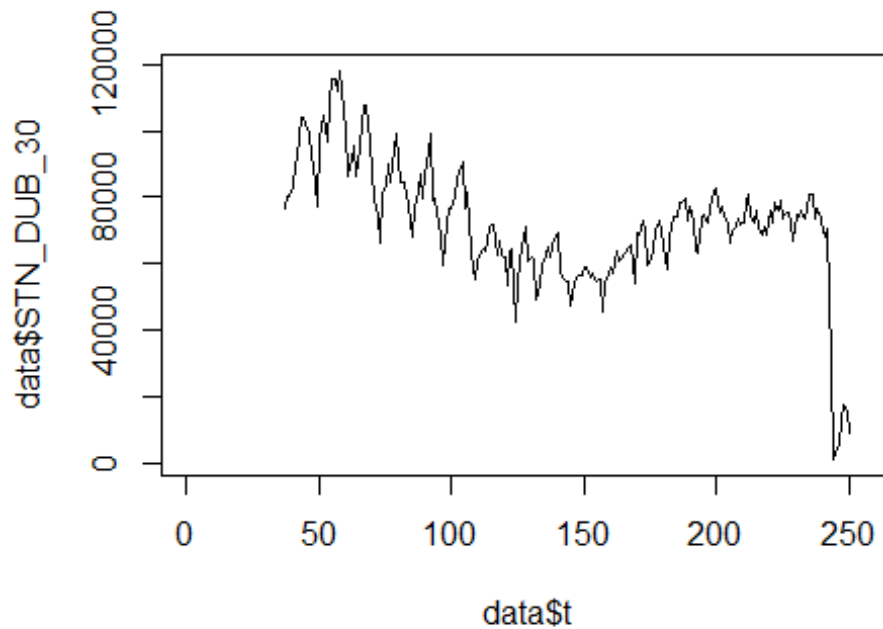
plot(data$LTN_EDI_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "LTN-EDI")
fit <- c(rep(0, 36), lm_LTN_EDI1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_LTN_EDI2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Stansted -> letiště Dublin

```
data$STN_DUB_30 <- data$STN_DUB/data$days * 30
plot(data$STN_DUB_30~data$t, t="l")
```



```
lm_STN_DUB1 <- glm(data$STN_DUB_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_STN_DUB1)

##
## Call:
## glm(formula = data$STN_DUB_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -30326  -10591    1832    9462   41109
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   94570.01    2601.85  36.347 < 2e-16 ***
## data$t        -133.07     16.78  -7.929 1.33e-13 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2008_FC  -6743.16    3403.28  -1.981  0.04887 *
## data$X2009_SF -11640.61    3996.35  -2.913  0.00397 **
## data$X2010_ER  -8341.93    7255.51  -1.150  0.25157
## data$X2019_CV -30610.57    4423.16  -6.921 5.47e-11 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 186241422)
```

```

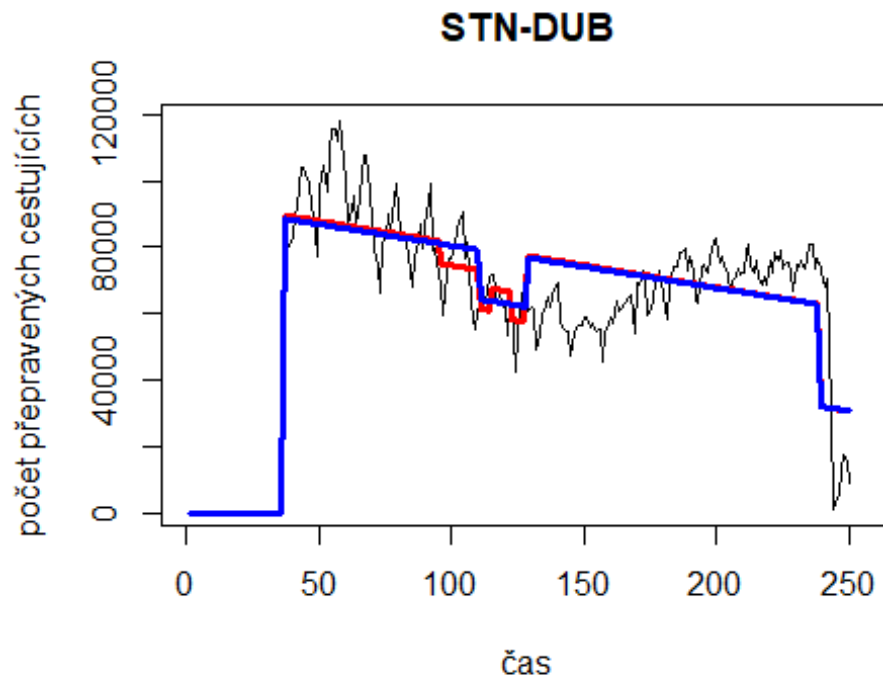
##
## Null deviance: 7.4105e+10 on 213 degrees of freedom
## Residual deviance: 3.8738e+10 on 208 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4690.3
##
## Number of Fisher Scoring iterations: 2

lm_STN_DUB2 <- glm(data$STN_DUB_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_STN_DUB2)

##
## Call:
## glm(formula = data$STN_DUB_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -30323 -10000 1207 9015 41138
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 93278.12 2529.89 36.870 < 2e-16 ***
## data$t -127.74 16.65 -7.673 6.22e-13 ***
## data$X2009_SF -14801.27 3407.79 -4.343 2.18e-05 ***
## data$X2019_CV -30621.71 4451.33 -6.879 6.79e-11 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 188633746)
##
## Null deviance: 7.4105e+10 on 213 degrees of freedom
## Residual deviance: 3.9613e+10 on 210 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4691.1
##
## Number of Fisher Scoring iterations: 2

plot(data$STN_DUB_30, type="l", xlab = "čas", ylab = "počet přepravených cestujíc
ích", main = "STN-DUB")
fit <- c(rep(0, 36), lm_STN_DUB1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_STN_DUB2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

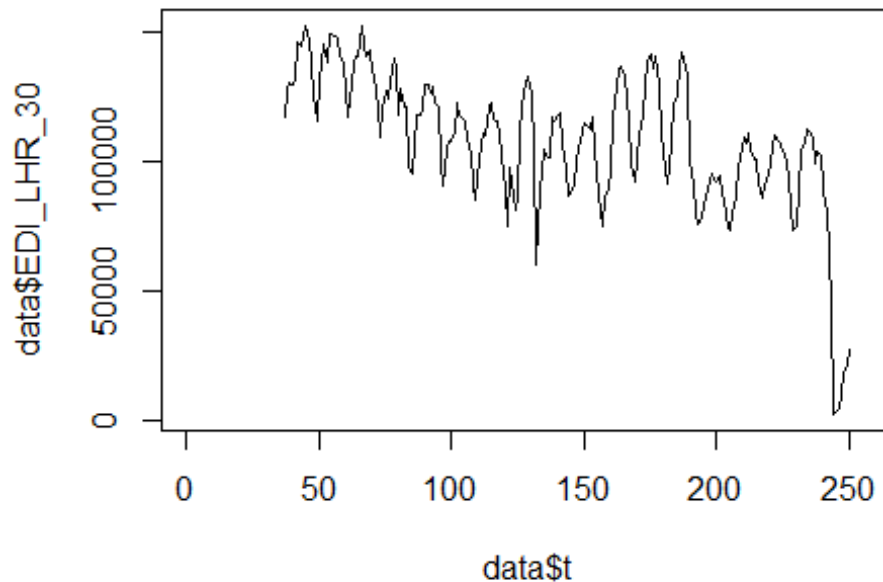


Spojení letiště

Edinburgh -> letiště Londýn Heathrow

```
data$EDI_LHR_30 <- data$EDI_LHR/data$days * 30
```

```
plot(data$EDI_LHR_30~data$t, t="l")
```

```
lm_EDI_LHR1 <- glm(data$EDI_LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_EDI_LHR1)

##
## Call:
## glm(formula = data$EDI_LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -55499  -12316    357    10865   60412
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  143804.99   3367.74  42.701 < 2e-16 ***
## data$t       -215.31     21.72  -9.911 < 2e-16 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2008_FC  -13356.85   4405.09  -3.032  0.00274 **
## data$X2009_SF   -6018.38   5172.73  -1.163  0.24597
## data$X2010_ER  -11415.09   9391.28  -1.215  0.22555
## data$X2019_CV  -50457.17   5725.18  -8.813  4.88e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 312024945)
```

```

##
## Null deviance: 1.5498e+11 on 213 degrees of freedom
## Residual deviance: 6.4901e+10 on 208 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4800.8
##
## Number of Fisher Scoring iterations: 2

lm_ED1_LHR2 <- glm(data$EDI_LHR_30~data$t+data$X2008_FC+data$X2010_ER+data$X2019_CV)
summary(lm_ED1_LHR2)

##
## Call:
## glm(formula = data$EDI_LHR_30 ~ data$t + data$X2008_FC + data$X2010_ER +
## data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -55180 -12159 179 11092 60421
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 143288.1 3341.1 42.886 < 2e-16 ***
## data$t -213.8 21.7 -9.851 < 2e-16 ***
## data$X2008_FC -14264.9 4339.1 -3.288 0.00119 **
## data$X2010_ER -17104.6 8024.5 -2.132 0.03421 *
## data$X2019_CV -50308.1 5728.6 -8.782 5.84e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 312552982)
##
## Null deviance: 1.5498e+11 on 213 degrees of freedom
## Residual deviance: 6.5324e+10 on 209 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4800.1
##
## Number of Fisher Scoring iterations: 2

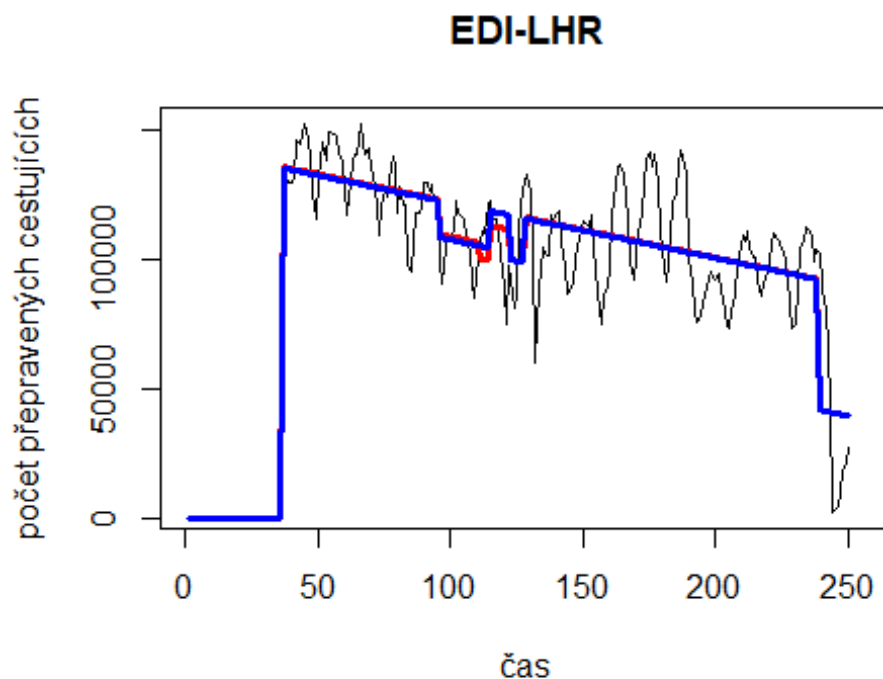
lm_ED1_LHR3 <- lm(data$EDI_LHR_30~data$t+data$X2008_FC+data$X2010_ER+data$X2019_CV)
summary(lm_ED1_LHR3)

##
## Call:
## lm(formula = data$EDI_LHR_30 ~ data$t + data$X2008_FC + data$X2010_ER +
## data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max

```

```
## -55180 -12159 179 11092 60421
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 143288.1 3341.1 42.886 < 2e-16 ***
## data$t -213.8 21.7 -9.851 < 2e-16 ***
## data$X2008_FC -14264.9 4339.1 -3.288 0.00119 **
## data$X2010_ER -17104.6 8024.5 -2.132 0.03421 *
## data$X2019_CV -50308.1 5728.6 -8.782 5.84e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 17680 on 209 degrees of freedom
## (42 observations deleted due to missingness)
## Multiple R-squared: 0.5785, Adjusted R-squared: 0.5704
## F-statistic: 71.71 on 4 and 209 DF, p-value: < 2.2e-16

plot(data$EDI_LHR_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
      main = "EDI-LHR")
fit <- c(rep(0, 36), lm_EDI_LHR1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_EDI_LHR2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

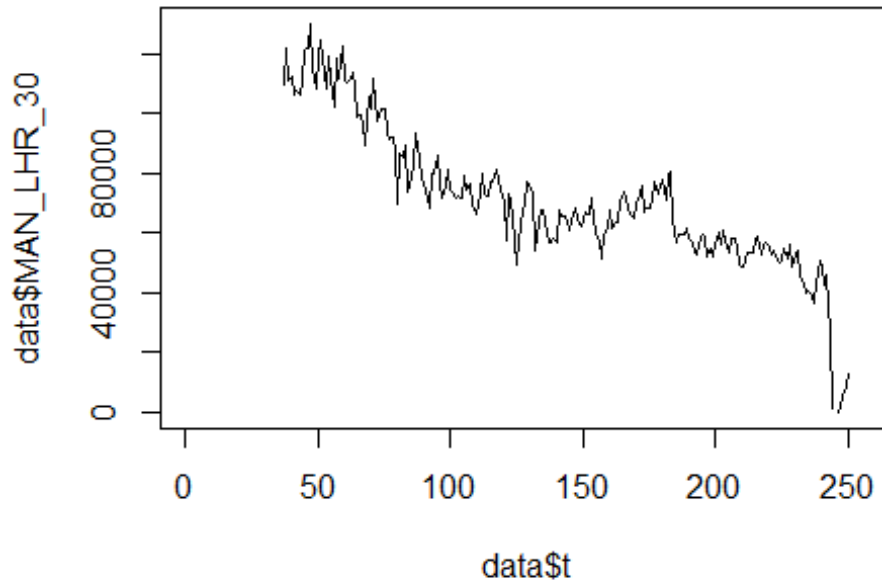


Manchester -> letiště Londýn Heathrow

Spojení letiště

```
data$MAN_LHR_30 <- data$MAN_LHR/data$days * 30
```

```
plot(data$MAN_LHR_30~data$t, t="l")
```



```
lm_MAN_LHR1 <- glm(data$MAN_LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
```

```
summary(lm_MAN_LHR1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$MAN_LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -25172.2  -4787.8   -89.3   5305.0  26428.3
```

```
##
```

```
## Coefficients: (2 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)  121475.11   1871.93   64.893 < 2e-16 ***  
## data$t       -330.98     12.07  -27.411 < 2e-16 ***  
## data$X2001_FC      NA          NA      NA      NA  
## data$X2001_TER     NA          NA      NA      NA  
## data$X2008_FC  -11706.04   2448.54   -4.781 3.31e-06 ***  
## data$X2009_SF   -5482.75   2875.23   -1.907 0.05792 .  
## data$X2010_ER  -13734.57   5220.07   -2.631 0.00915 **  
## data$X2019_CV  -18195.20   3294.84   -5.522 9.97e-08 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 96403602)
##
##      Null deviance: 1.2113e+11  on 212  degrees of freedom
## Residual deviance: 1.9956e+10  on 207  degrees of freedom
## (43 observations deleted due to missingness)
## AIC: 4528.2
##
## Number of Fisher Scoring iterations: 2

lm_MAN_LHR2 <- glm(data$MAN_LHR_30~data$t+data$X2008_FC+data$X2010_ER+data$X2
019_CV)
summary(lm_MAN_LHR2)

##
## Call:
## glm(formula = data$MAN_LHR_30 ~ data$t + data$X2008_FC + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -24810.9   -5791.7    121.1    5251.1   26435.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  121004.19   1867.29   64.802 < 2e-16 ***
## data$t       -329.61     12.13  -27.174 < 2e-16 ***
## data$X2008_FC -12533.30   2425.02   -5.168 5.53e-07 ***
## data$X2010_ER -18917.73   4484.72   -4.218 3.67e-05 ***
## data$X2019_CV -18059.34   3314.88   -5.448 1.43e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 97625446)
##
##      Null deviance: 1.2113e+11  on 212  degrees of freedom
## Residual deviance: 2.0306e+10  on 208  degrees of freedom
## (43 observations deleted due to missingness)
## AIC: 4529.9
##
## Number of Fisher Scoring iterations: 2

lm_MAN_LHR3 <- lm(data$MAN_LHR_30~data$t+data$X2008_FC+data$X2010_ER+data$X20
19_CV)
summary(lm_MAN_LHR3)

##
## Call:
## lm(formula = data$MAN_LHR_30 ~ data$t + data$X2008_FC + data$X2010_ER +

```

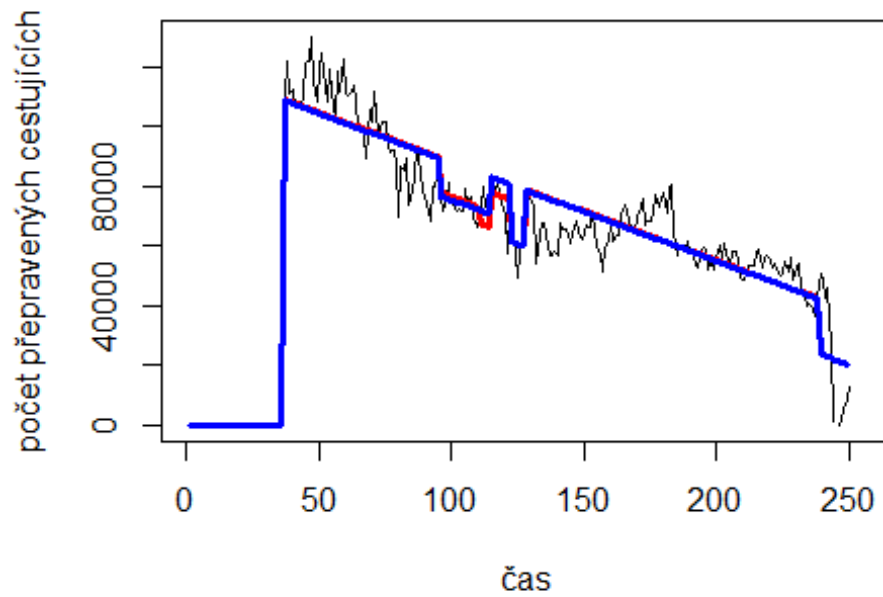
```

##      data$X2019_CV)
##
## Residuals:
##      Min        1Q      Median        3Q        Max
## -24810.9  -5791.7    121.1    5251.1   26435.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  121004.19   1867.29   64.802 < 2e-16 ***
## data$t        -329.61     12.13  -27.174 < 2e-16 ***
## data$X2008_FC -12533.30   2425.02   -5.168 5.53e-07 ***
## data$X2010_ER -18917.73   4484.72   -4.218 3.67e-05 ***
## data$X2019_CV -18059.34   3314.88   -5.448 1.43e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 9881 on 208 degrees of freedom
## (43 observations deleted due to missingness)
## Multiple R-squared:  0.8324, Adjusted R-squared:  0.8291
## F-statistic: 258.2 on 4 and 208 DF,  p-value: < 2.2e-16

plot(data$MAN_LHR_30, type="l",xlab ="čas",ylab ="počet přepravených cestujíc
ích", main = "MAN-LHR")
fit <- c(rep(0, 36), lm_MAN_LHR1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_MAN_LHR2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

MAN-LHR

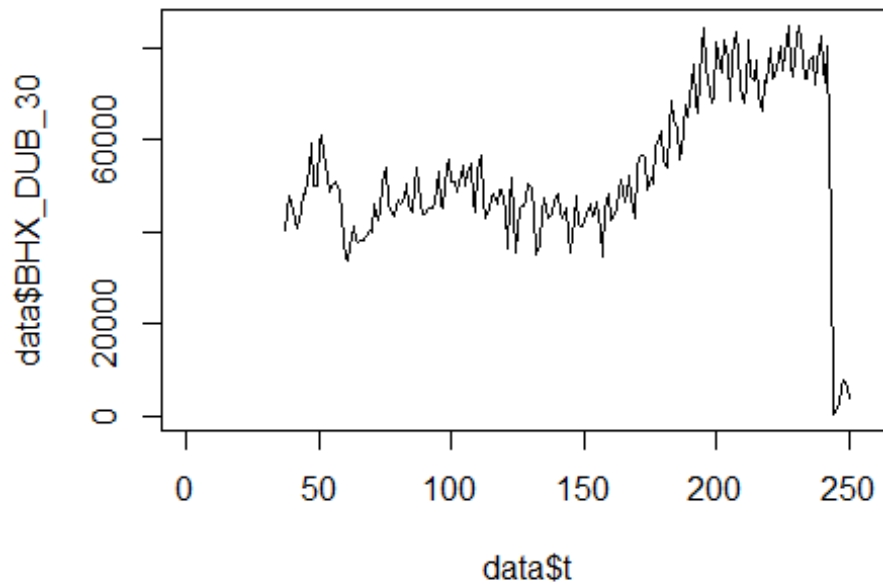


Spojeni

Birmingham -> Dublin

```
data$BHX_DUB_30 <- data$BHX_DUB/data$days * 30
```

```
plot(data$BHX_DUB_30~data$t, t="l")
```



```
lm_BHX_DUB1 <- glm(data$BHX_DUB_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_BHX_DUB1)

##
## Call:
## glm(formula = data$BHX_DUB_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -31020   -7351     452     5986   51670
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    31614.90    2296.96  13.764 <2e-16 ***
## data$t          168.82     14.82  11.394 <2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER        NA          NA      NA      NA
## data$X2008_FC    1750.85    3004.48  0.583  0.561
## data$X2009_SF   -5325.14    3528.04 -1.509  0.133
## data$X2010_ER   -3625.51    6405.29 -0.566  0.572
## data$X2019_CV  -41261.19    3904.84 -10.567 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 145150207)
```



```

##
## Null deviance: 5.6673e+10 on 213 degrees of freedom
## Residual deviance: 3.0191e+10 on 208 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4637
##
## Number of Fisher Scoring iterations: 2

lm_BHX_DUB2 <- glm(data$BHX_DUB_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_BHX_DUB2)

##
## Call:
## glm(formula = data$BHX_DUB_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -31021 -7222 347 6046 51661
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 31982.92 2212.71 14.454 <2e-16 ***
## data$t 167.20 14.56 11.483 <2e-16 ***
## data$X2009_SF -6117.85 2980.54 -2.053 0.0414 *
## data$X2019_CV -41233.67 3893.24 -10.591 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 144299068)
##
## Null deviance: 5.6673e+10 on 213 degrees of freedom
## Residual deviance: 3.0303e+10 on 210 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4633.8
##
## Number of Fisher Scoring iterations: 2

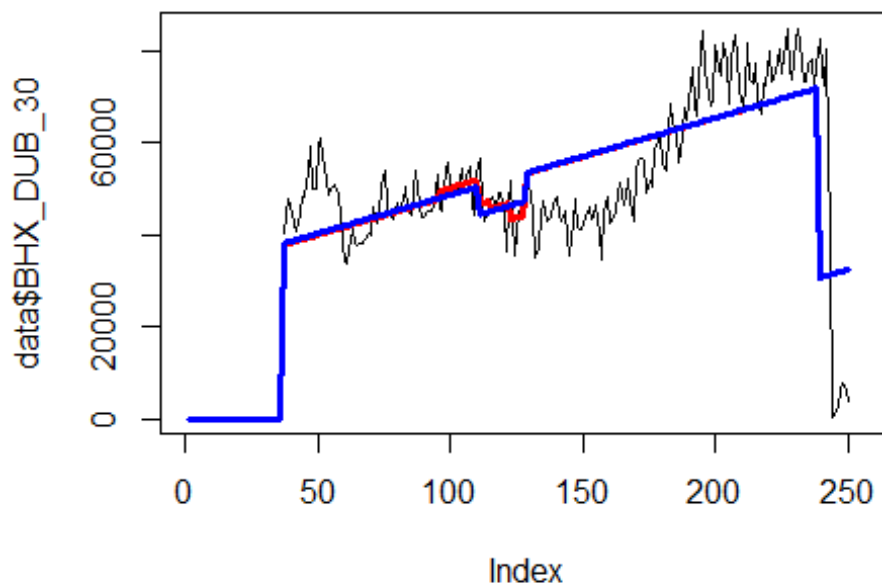
lm_BHX_DUB3 <-lm(data$BHX_DUB_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_BHX_DUB3)

##
## Call:
## lm(formula = data$BHX_DUB_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -31021 -7222 347 6046 51661
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 31982.92 2212.71 14.454 <2e-16 ***

```

```
## data$t          167.20      14.56  11.483  <2e-16 ***
## data$X2009_SF  -6117.85    2980.54  -2.053  0.0414 *
## data$X2019_CV -41233.67   3893.24 -10.591  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 12010 on 210 degrees of freedom
## (42 observations deleted due to missingness)
## Multiple R-squared:  0.4653, Adjusted R-squared:  0.4577
## F-statistic: 60.92 on 3 and 210 DF,  p-value: < 2.2e-16

plot(data$BHX_DUB_30, type="l")
fit <- c(rep(0, 36), lm_BHX_DUB1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_BHX_DUB2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

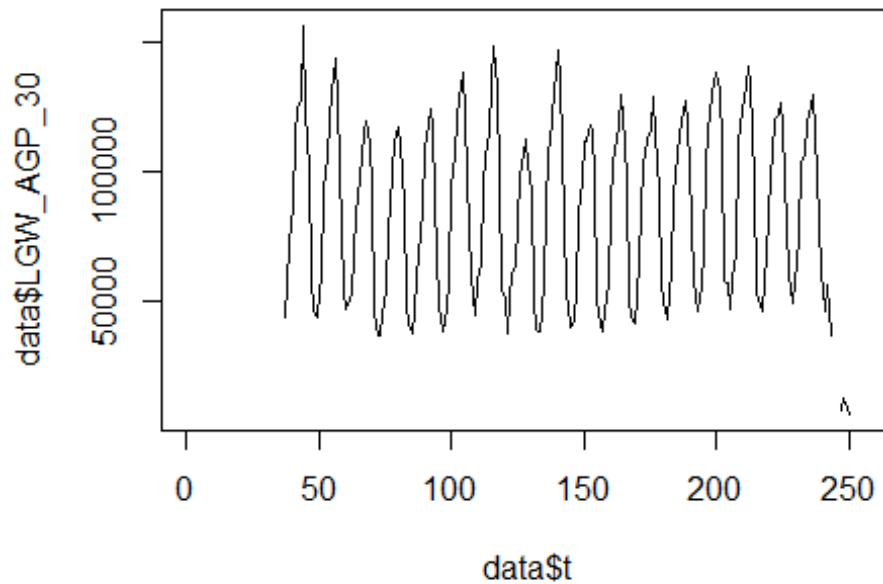


6. Spojeni letiště

London Gatwick -> letiště Málaga

```
data$LGW_AGP_30 <- data$LGW_AGP/data$days * 30

plot(data$LGW_AGP_30~data$t, t="l")
```



```
lm_LGW_AGP1 <- glm(data$LGW_AGP_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LGW_AGP1)
```

```
##
## Call:
## glm(formula = data$LGW_AGP_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -55820  -32613   5437   26820   73917
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   79965.39    6208.83  12.879 < 2e-16 ***
## data$t         50.85      40.05   1.270  0.206
## data$X2001_FC      NA         NA      NA     NA
## data$X2001_TER     NA         NA      NA     NA
## data$X2008_FC  -3268.85    8121.29  -0.403  0.688
## data$X2009_SF   7159.74    9536.53  0.751  0.454
## data$X2010_ER -11625.34   17313.91 -0.671  0.503
## data$X2019_CV -60284.49   11866.49 -5.080 8.46e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1060547803)
```

```

##
## Null deviance: 2.4598e+11 on 210 degrees of freedom
## Residual deviance: 2.1741e+11 on 205 degrees of freedom
## (45 observations deleted due to missingness)
## AIC: 4991.7
##
## Number of Fisher Scoring iterations: 2

lm_LGW_AGP2 <- glm(data$LGW_AGP_30~data$X2019_CV)
summary(lm_LGW_AGP2)

##
## Call:
## glm(formula = data$LGW_AGP_30 ~ data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -50320 -32374 6016 27720 69121
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 86999 2283 38.110 < 2e-16 ***
## data$X2019_CV -54895 11053 -4.966 1.42e-06 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 1052694324)
##
## Null deviance: 2.4598e+11 on 210 degrees of freedom
## Residual deviance: 2.2001e+11 on 209 degrees of freedom
## (45 observations deleted due to missingness)
## AIC: 4986.2
##
## Number of Fisher Scoring iterations: 2

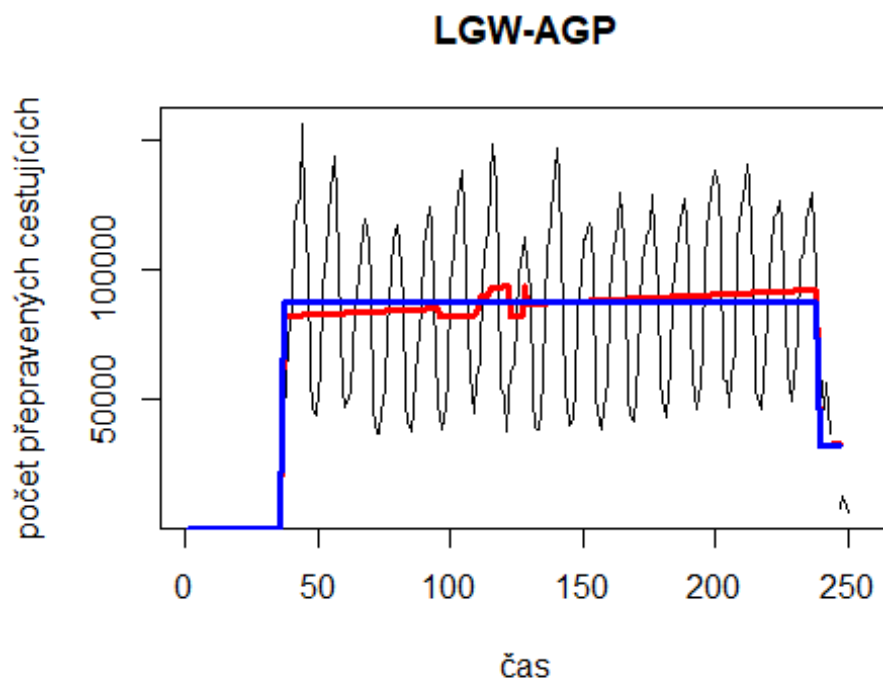
lm_LGW_AGP3 <- lm(data$LGW_AGP_30~data$X2019_CV)
summary(lm_LGW_AGP3)

##
## Call:
## lm(formula = data$LGW_AGP_30 ~ data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -50320 -32374 6016 27720 69121
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 86999 2283 38.110 < 2e-16 ***
## data$X2019_CV -54895 11053 -4.966 1.42e-06 ***
## ---

```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 32450 on 209 degrees of freedom
## (45 observations deleted due to missingness)
## Multiple R-squared:  0.1056, Adjusted R-squared:  0.1013
## F-statistic: 24.66 on 1 and 209 DF,  p-value: 1.415e-06

plot(data$LGW_AGP_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="LGW-AGP")
fit <- c(rep(0, 36), lm_LGW_AGP1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_LGW_AGP2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

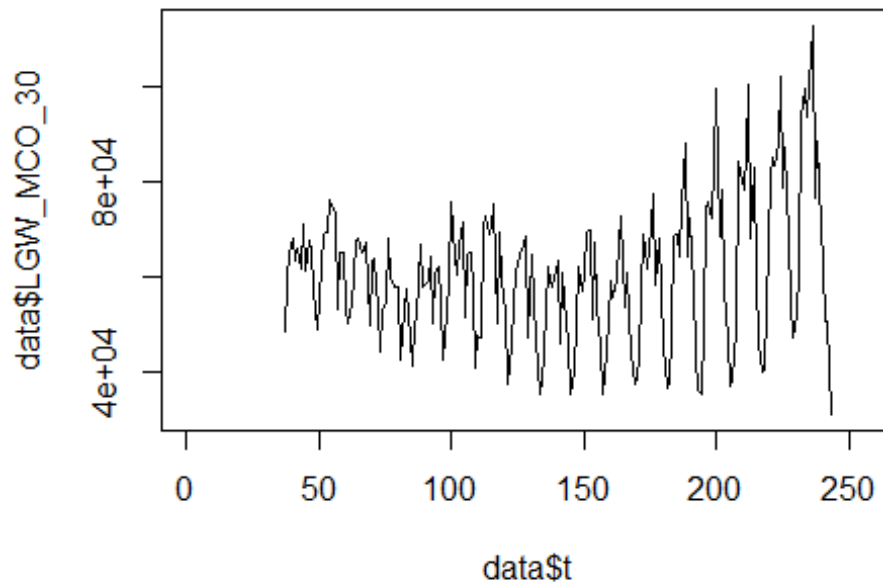


Spojení letiště

Gatwick -> letiště Orlando

```
data$LGW_MCO_30 <- data$LGW_MCO/data$days * 30
```

```
plot(data$LGW_MCO_30~data$t, t="l")
```



```
lm_LGW_MCO1 <- glm(data$LGW_MCO_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LGW_MCO1)

##
## Call:
## glm(formula = data$LGW_MCO_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -28990  -10147    696    9417   45147
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   51317.23   2939.79  17.456 < 2e-16 ***
## data$t         68.23     18.65   3.658 0.000324 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER     NA         NA      NA      NA
## data$X2003_SARS   7695.17   6301.65  1.221 0.223472
## data$X2008_FC    1003.77   3610.24  0.278 0.781274
## data$X2009_SF     688.03   4222.26  0.163 0.870719
## data$X2010_ER    -267.12   7652.95 -0.035 0.972191
## data$X2019_CV   -14567.29   6770.89 -2.151 0.032639 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 207184126)
##
## Null deviance: 4.4566e+10 on 206 degrees of freedom
## Residual deviance: 4.1437e+10 on 200 degrees of freedom
## (49 observations deleted due to missingness)
## AIC: 4560.2
##
## Number of Fisher Scoring iterations: 2

lm_LGW_MCO2 <- glm(data$LGW_MCO_30~data$t+data$X2019_CV)
summary(lm_LGW_MCO2)

##
## Call:
## glm(formula = data$LGW_MCO_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -28928 -9444 308 9503 45537
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 52766.07 2578.18 20.466 < 2e-16 ***
## data$t 60.44 17.26 3.501 0.000569 ***
## data$X2019_CV -14138.68 6718.63 -2.104 0.036568 *
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 204673183)
##
## Null deviance: 4.4566e+10 on 206 degrees of freedom
## Residual deviance: 4.1753e+10 on 204 degrees of freedom
## (49 observations deleted due to missingness)
## AIC: 4553.8
##
## Number of Fisher Scoring iterations: 2

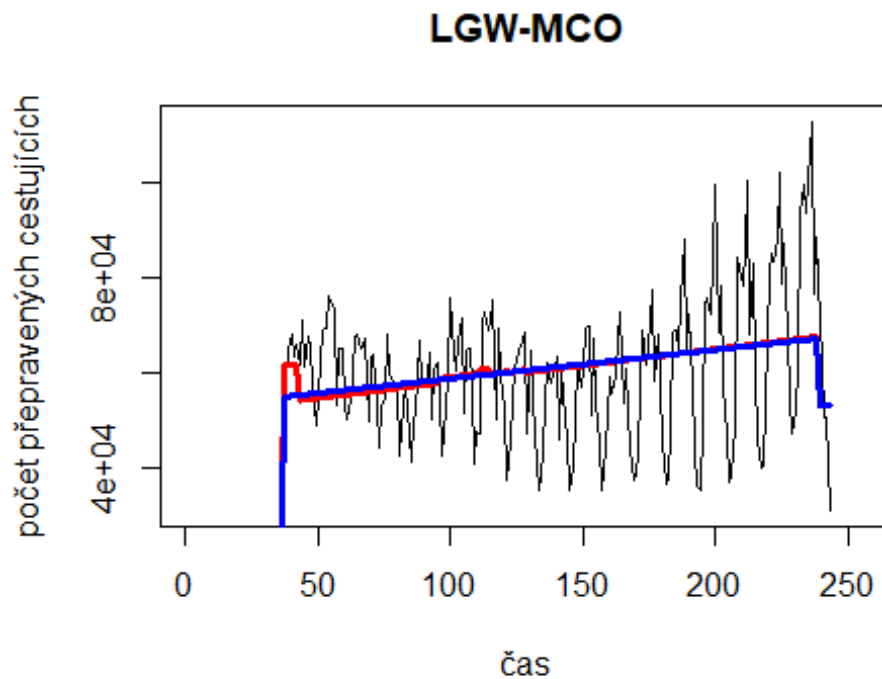
lm_LGW_MCO3 <- lm(data$LGW_MCO_30~data$t+data$X2019_CV)
summary(lm_LGW_MCO3)

##
## Call:
## lm(formula = data$LGW_MCO_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -28928 -9444 308 9503 45537
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)

```

```
## (Intercept)    52766.07    2578.18    20.466 < 2e-16 ***
## data$t         60.44      17.26     3.501 0.000569 ***
## data$X2019_CV -14138.68    6718.63    -2.104 0.036568 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 14310 on 204 degrees of freedom
## (49 observations deleted due to missingness)
## Multiple R-squared:  0.0631, Adjusted R-squared:  0.05392
## F-statistic:  6.87 on 2 and 204 DF,  p-value: 0.001296

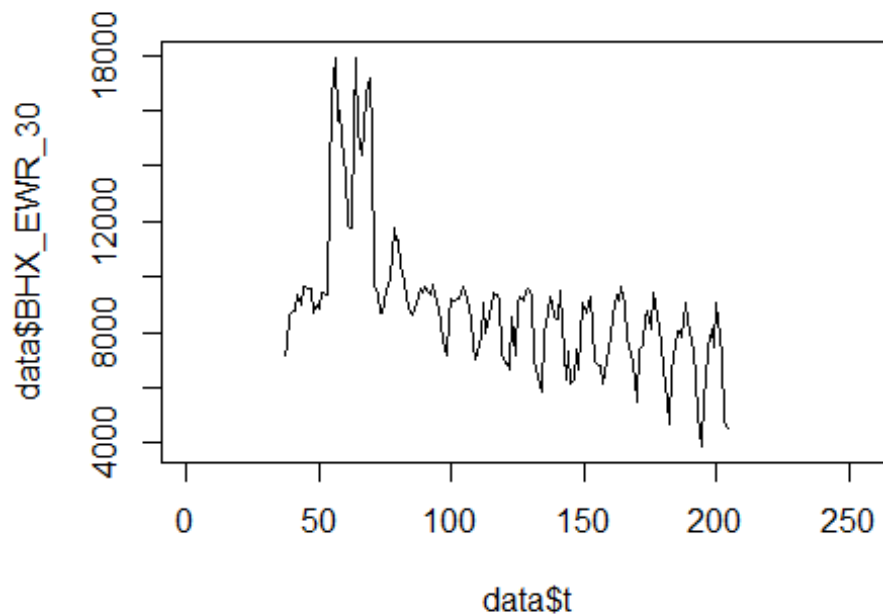
plot(data$LGW_MCO_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "LGW-MCO")
fit <- c(rep(0, 36), lm_LGW_MCO1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_LGW_MCO2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojení letiště

Birmingham -> letiště Newark

```
data$BHX_EWR_30 <- data$BHX_EWR/data$days * 30
plot(data$BHX_EWR_30~data$t, t="l")
```

```
lm_BHX_EWR1 <- glm(data$BHX_EWR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_BHX_EWR1)

##
## Call:
## glm(formula = data$BHX_EWR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -3283.7  -1384.0   -58.1    948.9   6502.0
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  13738.017    443.827   30.954 < 2e-16 ***
## data$t       -36.890     3.258  -11.322 < 2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2003_SARS -3920.697    849.394  -4.616 7.92e-06 ***
## data$X2008_FC -1250.102    481.387  -2.597  0.0103 *
## data$X2009_SF  -746.786    564.183  -1.324  0.1875
## data$X2010_ER   259.659   1020.418   0.254  0.7995
## data$X2019_CV          NA          NA      NA      NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 3682338)
##
## Null deviance: 1081896792 on 167 degrees of freedom
## Residual deviance: 596538818 on 162 degrees of freedom
## (88 observations deleted due to missingness)
## AIC: 3024.7
##
## Number of Fisher Scoring iterations: 2

lm_BHX_EWR2 <- glm(data$BHX_EWR_30~data$t+data$X2003_SARS+data$X2008_FC)
summary(lm_BHX_EWR2)

##
## Call:
## glm(formula = data$BHX_EWR_30 ~ data$t + data$X2003_SARS + data$X2008_FC)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -3214.5 -1326.2 -86.0 901.4 6570.1
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 13665.648 440.626 31.014 < 2e-16 ***
## data$t -36.824 3.258 -11.303 < 2e-16 ***
## data$X2003_SARS -3850.942 847.839 -4.542 1.07e-05 ***
## data$X2008_FC -1341.900 473.524 -2.834 0.00518 **
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3682425)
##
## Null deviance: 1081896792 on 167 degrees of freedom
## Residual deviance: 603917764 on 164 degrees of freedom
## (88 observations deleted due to missingness)
## AIC: 3022.7
##
## Number of Fisher Scoring iterations: 2

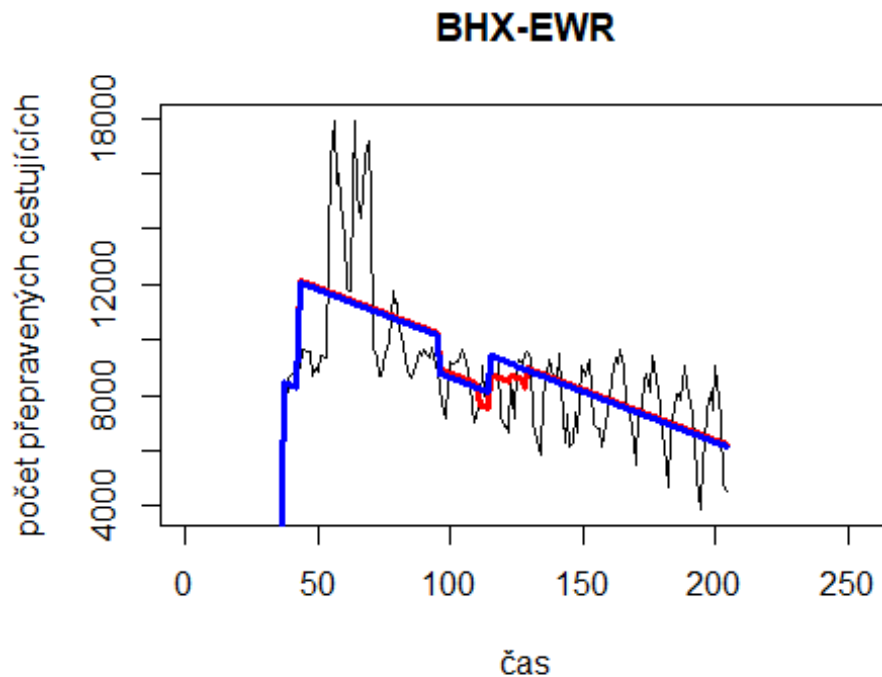
lm_BHX_EWR3 <- lm(data$BHX_EWR_30~data$t+data$X2003_SARS+data$X2008_FC)
summary(lm_BHX_EWR3)

##
## Call:
## lm(formula = data$BHX_EWR_30 ~ data$t + data$X2003_SARS + data$X2008_FC)
##
## Residuals:
## Min 1Q Median 3Q Max
## -3214.5 -1326.2 -86.0 901.4 6570.1
##
## Coefficients:

```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  13665.648   440.626  31.014 < 2e-16 ***
## data$t      -36.824     3.258 -11.303 < 2e-16 ***
## data$X2003_SARS -3850.942   847.839  -4.542 1.07e-05 ***
## data$X2008_FC  -1341.900   473.524  -2.834 0.00518 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1919 on 164 degrees of freedom
## (88 observations deleted due to missingness)
## Multiple R-squared:  0.4418, Adjusted R-squared:  0.4316
## F-statistic: 43.27 on 3 and 164 DF,  p-value: < 2.2e-16

plot(data$BHX_EWR_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "BHX-EWR")
fit <- c(rep(0, 36), lm_BHX_EWR1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_BHX_EWR2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

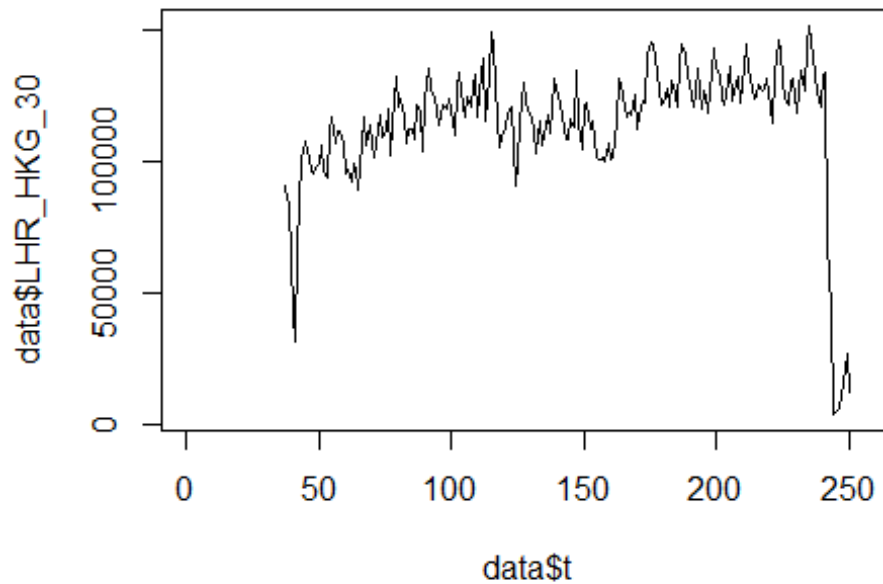


Spojení 1. Evropa

- Čína + HKG letiště Londýn Heathrow -> letiště Hongkong

```
data$LHR_HKG_30 <- data$LHR_HKG/data$days * 30
```

```
plot(data$LHR_HKG_30~data$t, t="l")
```



```
lm_LHR_HKG1 <- glm(data$LHR_HKG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_LHR_HKG1)
```

```
##
## Call:
## glm(formula = data$LHR_HKG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -44544   -6506    -567    6362   86265
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  100000.98   3615.10  27.662 < 2e-16 ***
## data$t       137.09     22.47   6.102 5.19e-09 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2003_SARS -38719.13   7077.60  -5.471 1.30e-07 ***
## data$X2005_FLU  -5791.13   5137.03  -1.127  0.261
## data$X2008_FC    8406.89   4046.81   2.077  0.039 *
## data$X2009_SF    5786.60   4693.23   1.233  0.219
## data$X2010_ER  -12039.61   8459.43  -1.423  0.156
## data$X2012_MERS  5823.19   5855.87   0.994  0.321
```

```

## data$X2013_FLU    -6377.66    5223.23   -1.221    0.223
## data$X2019_CV    -85211.57    5250.38  -16.230   < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 253054171)
##
##      Null deviance: 1.3843e+11  on 213  degrees of freedom
## Residual deviance: 5.1623e+10  on 204  degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4759.8
##
## Number of Fisher Scoring iterations: 2

lm_LHR_HKG2 <- glm(data$LHR_HKG_30~data$t+data$X2003_SARS+data$X2008_FC+data$
X2019_CV)
summary(lm_LHR_HKG2)

##
## Call:
## glm(formula = data$LHR_HKG_30 ~ data$t + data$X2003_SARS + data$X2008_FC +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -44539   -6902    -654    6634   86299
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    98253.11    3203.50  30.671 < 2e-16 ***
## data$t          146.63      20.58   7.123 1.67e-11 ***
## data$X2003_SARS -37347.82    6966.99  -5.361 2.19e-07 ***
## data$X2008_FC   10372.03    3936.69   2.635 0.00905 **
## data$X2019_CV  -85794.53    5187.93 -16.537 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 254674567)
##
##      Null deviance: 1.3843e+11  on 213  degrees of freedom
## Residual deviance: 5.3227e+10  on 209  degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4756.3
##
## Number of Fisher Scoring iterations: 2

lm_LHR_HKG3 <- lm(data$LHR_HKG_30~data$t+data$X2003_SARS+data$X2008_FC+data$X
2019_CV)
summary(lm_LHR_HKG3)

```

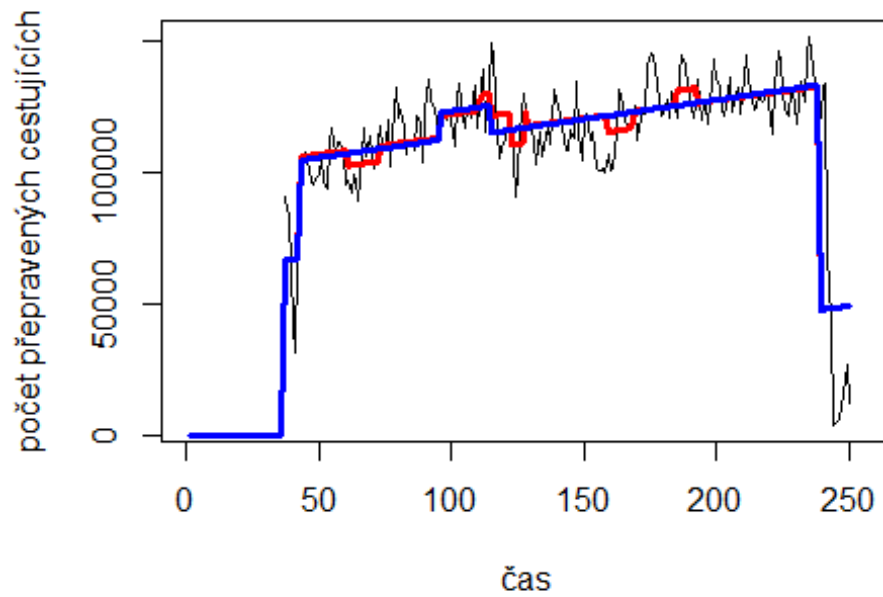
```

##
## Call:
## lm(formula = data$LHR_HKG_30 ~ data$t + data$X2003_SARS + data$X2008_FC +
##     data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -44539  -6902   -654    6634   86299
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   98253.11    3203.50  30.671 < 2e-16 ***
## data$t         146.63      20.58   7.123 1.67e-11 ***
## data$X2003_SARS -37347.82    6966.99  -5.361 2.19e-07 ***
## data$X2008_FC  10372.03    3936.69   2.635 0.00905 **
## data$X2019_CV -85794.53    5187.93 -16.537 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 15960 on 209 degrees of freedom
## (42 observations deleted due to missingness)
## Multiple R-squared:  0.6155, Adjusted R-squared:  0.6081
## F-statistic: 83.64 on 4 and 209 DF,  p-value: < 2.2e-16

plot(data$LHR_HKG_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="LHR-HKG")
fit <- c(rep(0, 36), lm_LHR_HKG1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_LHR_HKG2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

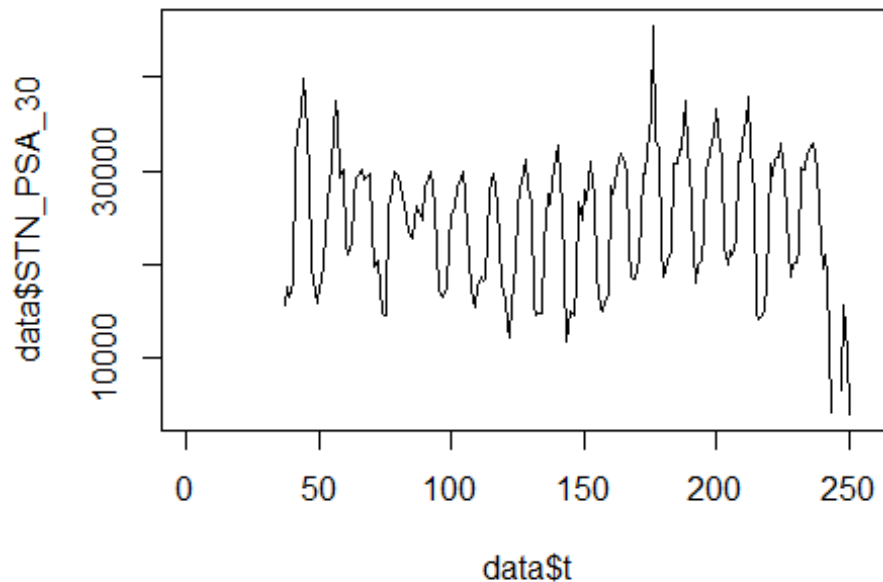
LHR-HKG



Spojení letiště Stansted -> letiště Pisa

```
data$STN_PSA_30 <- data$STN_PSA/data$days * 30
```

```
plot(data$STN_PSA_30~data$t, t="l")
```



```
lm_STN_PSA1 <- glm(data$STN_PSA_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_STN_PSA1)
```

```
##
## Call:
## glm(formula = data$STN_PSA_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -14156   -5507    1270    4780   19475
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   24711.114   1356.310   18.219 < 2e-16 ***
## data$t         7.810     8.604    0.908  0.3651
## data$X2001_FC      NA         NA       NA     NA
## data$X2001_TER     NA         NA       NA     NA
## data$X2003_SARS -2915.930   2907.588  -1.003  0.3171
## data$X2008_FC    -3257.686   1665.779  -1.956  0.0519 .
## data$X2009_SF    -3013.052   1948.175  -1.547  0.1235
## data$X2010_ER     1209.911   3531.116  0.343  0.7322
## data$X2019_CV   -13073.784   2426.333  -5.388 1.95e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



```

##
## (Dispersion parameter for gaussian family taken to be 44108593)
##
## Null deviance: 1.0658e+10 on 210 degrees of freedom
## Residual deviance: 8.9982e+09 on 204 degrees of freedom
## (45 observations deleted due to missingness)
## AIC: 4321.7
##
## Number of Fisher Scoring iterations: 2

lm_STN_PSA2 <- glm(data$STN_PSA_30~data$X2008_FC+data$X2019_CV)
summary(lm_STN_PSA2)

##
## Call:
## glm(formula = data$STN_PSA_30 ~ data$X2008_FC + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -13846 -5430 1073 5160 20042
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 25518.3 492.6 51.798 < 2e-16 ***
## data$X2008_FC -3879.1 1606.3 -2.415 0.0166 *
## data$X2019_CV -11972.7 2275.4 -5.262 3.54e-07 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 44414420)
##
## Null deviance: 1.0658e+10 on 210 degrees of freedom
## Residual deviance: 9.2382e+09 on 208 degrees of freedom
## (45 observations deleted due to missingness)
## AIC: 4319.3
##
## Number of Fisher Scoring iterations: 2

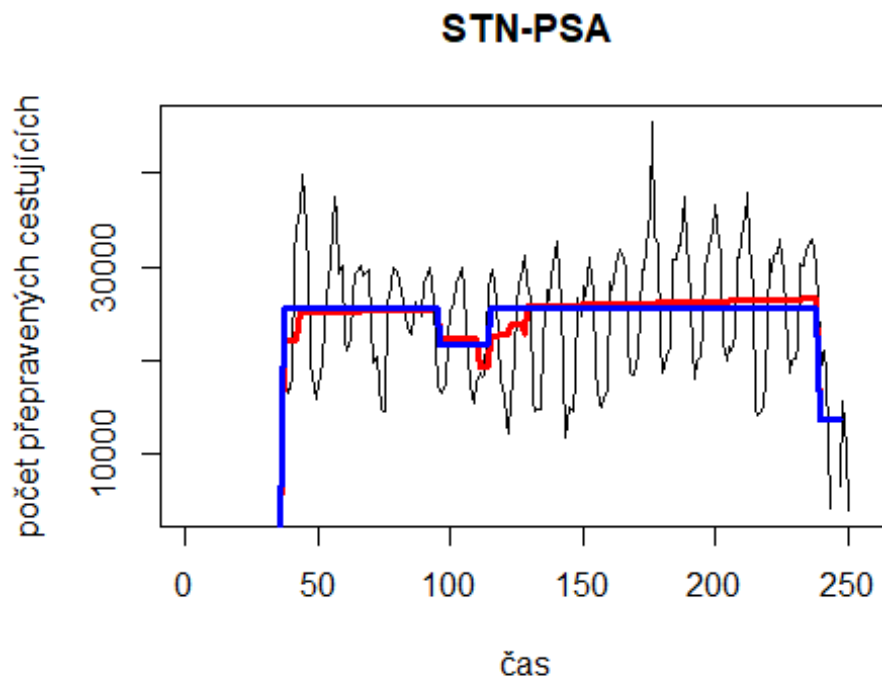
lm_STN_PSA3 <- lm(data$STN_PSA_30~data$X2008_FC+data$X2019_CV)
summary(lm_STN_PSA3)

##
## Call:
## lm(formula = data$STN_PSA_30 ~ data$X2008_FC + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -13846 -5430 1073 5160 20042
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)

```

```
## (Intercept)      25518.3      492.6  51.798 < 2e-16 ***
## data$X2008_FC   -3879.1     1606.3  -2.415  0.0166 *
## data$X2019_CV  -11972.7     2275.4  -5.262 3.54e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 6664 on 208 degrees of freedom
## (45 observations deleted due to missingness)
## Multiple R-squared:  0.1332, Adjusted R-squared:  0.1249
## F-statistic: 15.99 on 2 and 208 DF,  p-value: 3.484e-07

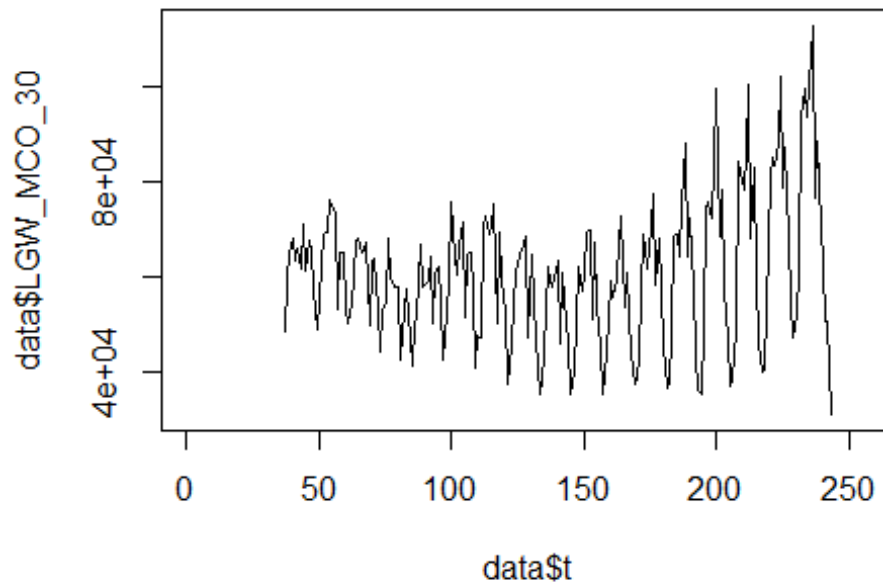
plot(data$STN_PSA_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "STN-PSA")
fit <- c(rep(0, 36), lm_STN_PSA1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_STN_PSA2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Spojeni Gatwick -

> Orlando

```
data$LGW_MCO_30 <- data$LGW_MCO/data$days * 30
plot(data$LGW_MCO_30~data$t, t="l")
```



```
lm_LGW_MCO1 <- glm(data$LGW_MCO_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LGW_MCO1)
```

```
##
## Call:
## glm(formula = data$LGW_MCO_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -28990  -10147    696    9417   45147
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   51317.23   2939.79  17.456 < 2e-16 ***
## data$t         68.23     18.65   3.658 0.000324 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER     NA         NA      NA      NA
## data$X2003_SARS   7695.17   6301.65  1.221 0.223472
## data$X2008_FC    1003.77   3610.24  0.278 0.781274
## data$X2009_SF     688.03   4222.26  0.163 0.870719
## data$X2010_ER    -267.12   7652.95 -0.035 0.972191
## data$X2019_CV  -14567.29   6770.89 -2.151 0.032639 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 207184126)
##
## Null deviance: 4.4566e+10 on 206 degrees of freedom
## Residual deviance: 4.1437e+10 on 200 degrees of freedom
## (49 observations deleted due to missingness)
## AIC: 4560.2
##
## Number of Fisher Scoring iterations: 2

lm_LGW_MCO2 <- glm(data$LGW_MCO_30~data$t+data$X2019_CV)
summary(lm_LGW_MCO2)

##
## Call:
## glm(formula = data$LGW_MCO_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -28928 -9444 308 9503 45537
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 52766.07 2578.18 20.466 < 2e-16 ***
## data$t 60.44 17.26 3.501 0.000569 ***
## data$X2019_CV -14138.68 6718.63 -2.104 0.036568 *
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 204673183)
##
## Null deviance: 4.4566e+10 on 206 degrees of freedom
## Residual deviance: 4.1753e+10 on 204 degrees of freedom
## (49 observations deleted due to missingness)
## AIC: 4553.8
##
## Number of Fisher Scoring iterations: 2

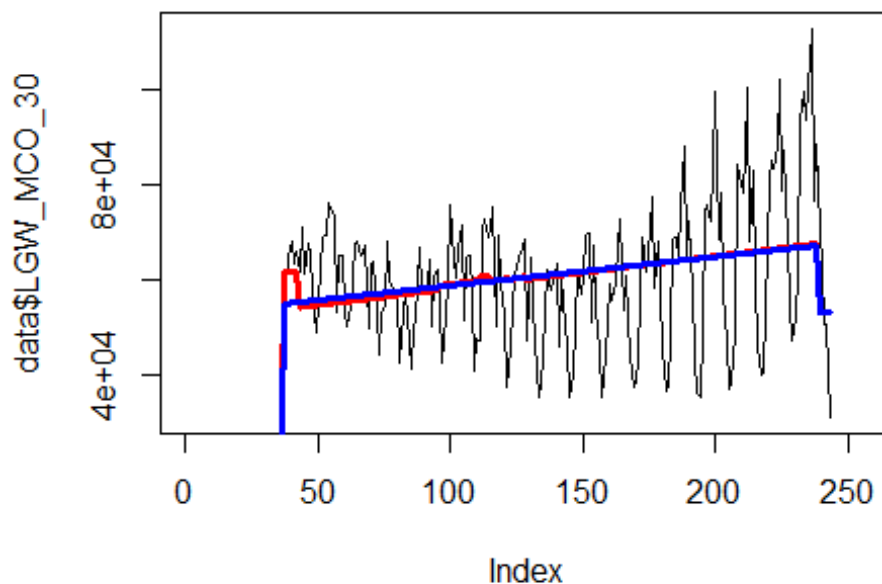
lm_LGW_MCO3 <- lm(data$LGW_MCO_30~data$t+data$X2019_CV)
summary(lm_LGW_MCO3)

##
## Call:
## lm(formula = data$LGW_MCO_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -28928 -9444 308 9503 45537
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)

```

```
## (Intercept)    52766.07    2578.18    20.466 < 2e-16 ***
## data$t         60.44      17.26     3.501 0.000569 ***
## data$X2019_CV -14138.68    6718.63    -2.104 0.036568 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 14310 on 204 degrees of freedom
## (49 observations deleted due to missingness)
## Multiple R-squared:  0.0631, Adjusted R-squared:  0.05392
## F-statistic:  6.87 on 2 and 204 DF,  p-value: 0.001296

plot(data$LGW_MCO_30, type="l")
fit <- c(rep(0, 36), lm_LGW_MCO1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_LGW_MCO2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

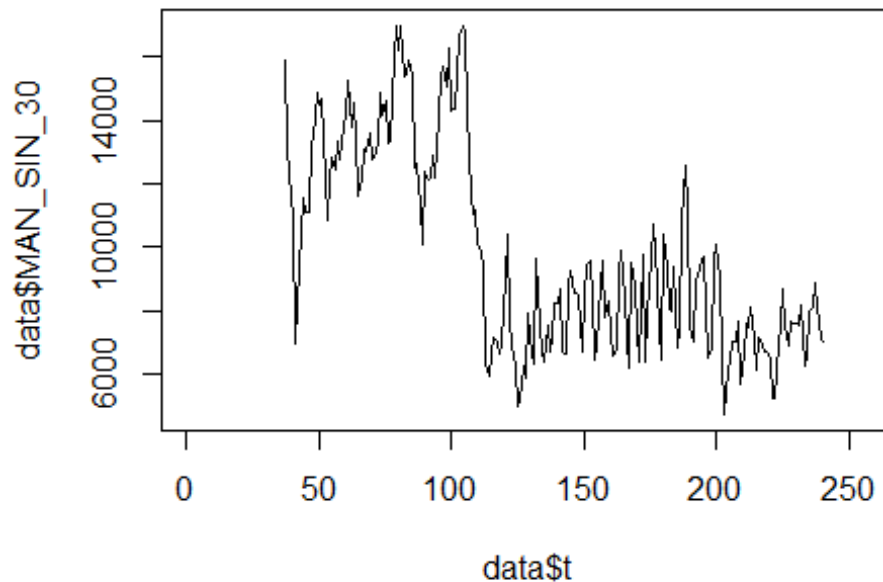


Spojení letiště

Manchester -> letiště Singapur

```
data$MAN_SIN_30 <- data$MAN_SIN/data$days * 30

plot(data$MAN_SIN_30~data$t, t="l")
```



```
lm_MAN_SIN1 <- glm(data$MAN_SIN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_MAN_SIN1)
```

```
##
## Call:
## glm(formula = data$MAN_SIN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##     data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -4208.5  -1169.0   111.1   1169.1  4701.3
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  15445.421   424.628  36.374 < 2e-16 ***
## data$t       -39.293     2.639 -14.889 < 2e-16 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2003_SARS -2641.744   831.245  -3.178  0.00173 **
## data$X2005_FLU   456.900   603.331   0.757  0.44979
## data$X2008_FC   2480.689   475.282   5.219  4.6e-07 ***
## data$X2009_SF  -3968.132   551.199  -7.199  1.3e-11 ***
## data$X2010_ER   -635.983   993.520  -0.640  0.52284
## data$X2012_MERS 1017.297   687.747   1.479  0.14072
```

```

## data$X2013_FLU  -1083.187    613.444  -1.766  0.07901 .
## data$X2019_CV   1061.137   1352.087   0.785  0.43352
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3490476)
##
##      Null deviance: 2071900873  on 203  degrees of freedom
## Residual deviance:  677152274  on 194  degrees of freedom
## (52 observations deleted due to missingness)
## AIC: 3664
##
## Number of Fisher Scoring iterations: 2

lm_MAN_SIN2 <- glm(data$MAN_SIN_30~data$t+data$X2003_SARS+data$X2008_FC+data$
X2009_SF)
summary(lm_MAN_SIN2)

##
## Call:
## glm(formula = data$MAN_SIN_30 ~ data$t + data$X2003_SARS + data$X2008_FC +
##      data$X2009_SF)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -4208.3  -1187.2    82.4   1119.2   4667.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   15489.456    381.306  40.622 < 2e-16 ***
## data$t         -39.417     2.401  -16.418 < 2e-16 ***
## data$X2003_SARS -2680.879    822.490  -3.259  0.00131 **
## data$X2008_FC   2493.627    466.744   5.343 2.49e-07 ***
## data$X2009_SF  -4176.879    471.240  -8.864 4.39e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3533836)
##
##      Null deviance: 2071900873  on 203  degrees of freedom
## Residual deviance:  703233379  on 199  degrees of freedom
## (52 observations deleted due to missingness)
## AIC: 3661.8
##
## Number of Fisher Scoring iterations: 2

lm_MAN_SIN3 <- lm(data$MAN_SIN_30~data$t+data$X2003_SARS+data$X2008_FC+data$X
2009_SF)
summary(lm_MAN_SIN3)

```

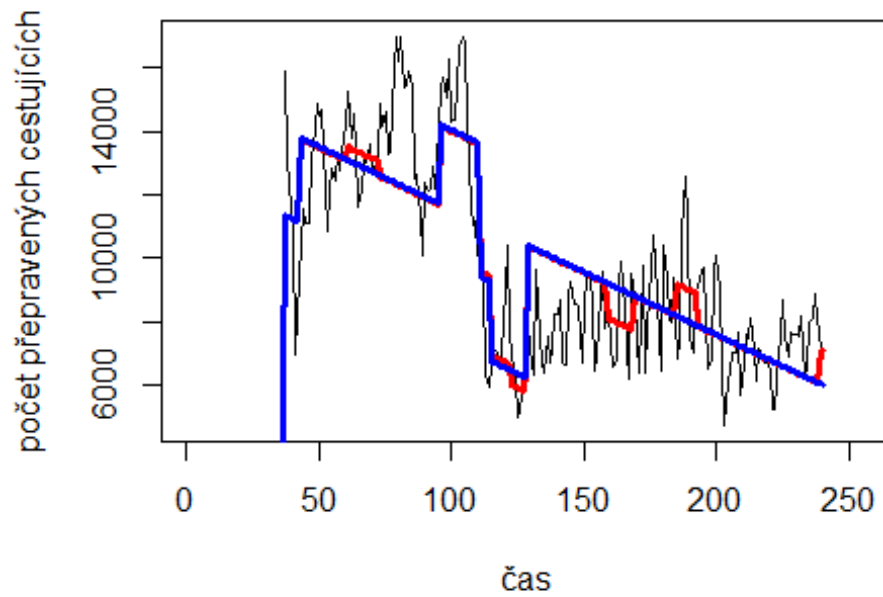
```

##
## Call:
## lm(formula = data$MAN_SIN_30 ~ data$t + data$X2003_SARS + data$X2008_FC +
##     data$X2009_SF)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -4208.3 -1187.2    82.4  1119.2  4667.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  15489.456   381.306  40.622 < 2e-16 ***
## data$t       -39.417     2.401  -16.418 < 2e-16 ***
## data$X2003_SARS -2680.879   822.490  -3.259  0.00131 **
## data$X2008_FC   2493.627   466.744   5.343  2.49e-07 ***
## data$X2009_SF  -4176.879   471.240  -8.864  4.39e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1880 on 199 degrees of freedom
## (52 observations deleted due to missingness)
## Multiple R-squared:  0.6606, Adjusted R-squared:  0.6538
## F-statistic: 96.83 on 4 and 199 DF,  p-value: < 2.2e-16

plot(data$MAN_SIN_30, type="l", xlab = "čas", ylab = "počet přepravených cestujíc
ích", main = "MAN-SIN")
fit <- c(rep(0, 36), lm_MAN_SIN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_MAN_SIN2$fitted.values)
lines(fit2, col="blue", lwd=3)

```


MAN-SIN

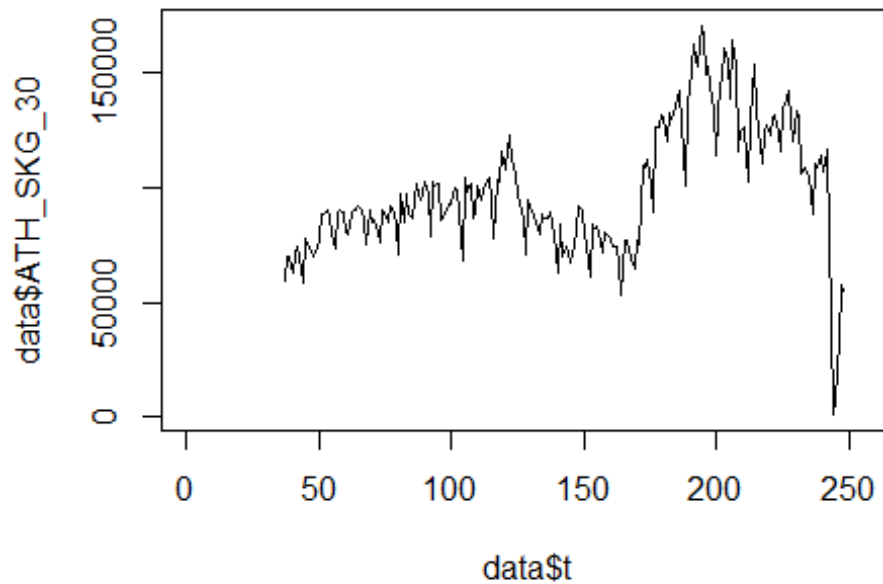


Spojení letiště

Athény -> letiště Thessaloniki

```
data$ATH_SKG_30 <- data$ATH_SKG/data$days * 30
```

```
plot(data$ATH_SKG_30~data$t, t="l")
```



```
lm_ATH_SKG1 <- glm(data$ATH_SKG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ATH_SKG1)
```

```
##
## Call:
## glm(formula = data$ATH_SKG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -63201  -12291    2082   11971   55097
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    60522.84   4380.42  13.817 < 2e-16 ***
## data$t         281.11     27.79  10.116 < 2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2003_SARS  -3814.97   9390.17  -0.406  0.685
## data$X2008_FC    2361.49   5379.68  0.439  0.661
## data$X2009_SF    6501.02   6291.68  1.033  0.303
## data$X2010_ER   -3019.06  11403.82 -0.265  0.791
## data$X2019_CV  -64524.84   7494.27 -8.610 1.94e-15 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 460044774)
##
## Null deviance: 1.6071e+11 on 211 degrees of freedom
## Residual deviance: 9.4309e+10 on 205 degrees of freedom
## (44 observations deleted due to missingness)
## AIC: 4839.2
##
## Number of Fisher Scoring iterations: 2

lm_ATH_SKG2 <- glm(data$ATH_SKG_30~data$t+data$X2019_CV)
summary(lm_ATH_SKG2)

##
## Call:
## glm(formula = data$ATH_SKG_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -63200 -12759 1826 11669 54577
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 61362.94 3845.13 15.959 < 2e-16 ***
## data$t 279.46 25.74 10.855 < 2e-16 ***
## data$X2019_CV -64963.43 7431.76 -8.741 7.6e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 455298818)
##
## Null deviance: 1.6071e+11 on 211 degrees of freedom
## Residual deviance: 9.5157e+10 on 209 degrees of freedom
## (44 observations deleted due to missingness)
## AIC: 4833.1
##
## Number of Fisher Scoring iterations: 2

lm_ATH_SKG3 <- lm(data$ATH_SKG_30~data$t+data$X2019_CV)
summary(lm_ATH_SKG3)

##
## Call:
## lm(formula = data$ATH_SKG_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -63200 -12759 1826 11669 54577
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)

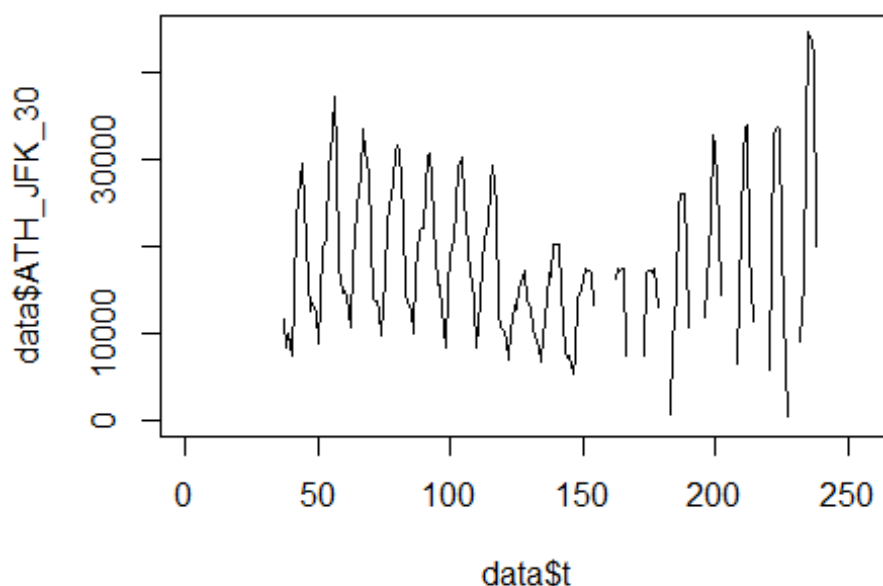
```

```
## (Intercept)    61362.94    3845.13    15.959 < 2e-16 ***
## data$t         279.46      25.74    10.855 < 2e-16 ***
## data$X2019_CV -64963.43    7431.76    -8.741 7.6e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21340 on 209 degrees of freedom
## (44 observations deleted due to missingness)
## Multiple R-squared:  0.4079, Adjusted R-squared:  0.4022
## F-statistic: 71.99 on 2 and 209 DF, p-value: < 2.2e-16
```

Spojeni Atheny -> JFK

```
data$ATH_JFK_30 <- data$ATH_JFK/data$days * 30
```

```
plot(data$ATH_JFK_30~data$t, t="l")
```



```
lm_ATH_JFK1 <- glm(data$ATH_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ATH_JFK1)
```

```
##
## Call:
## glm(formula = data$ATH_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
```

```

## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -18528   -5599   -1282    5276   26797
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   19596.480   1860.294   10.534 <2e-16 ***
## data$t        -6.764     12.562   -0.538  0.5910
## data$X2001_FC      NA         NA         NA     NA
## data$X2001_TER      NA         NA         NA     NA
## data$X2003_SARS -6888.941   3885.860   -1.773  0.0781 .
## data$X2008_FC     98.178    2227.145    0.044  0.9649
## data$X2009_SF    -1674.063   2605.573   -0.642  0.5215
## data$X2010_ER   -3501.135   4709.602   -0.743  0.4583
## data$X2019_CV      NA         NA         NA     NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 78441526)
##
##   Null deviance: 1.3168e+10 on 168 degrees of freedom
## Residual deviance: 1.2786e+10 on 163 degrees of freedom
## (87 observations deleted due to missingness)
## AIC: 3559.6
##
## Number of Fisher Scoring iterations: 2

lm_ATH_JFK2 <- lm(data$ATH_JFK_30~data$X2003_SARS)
summary(lm_ATH_JFK2)

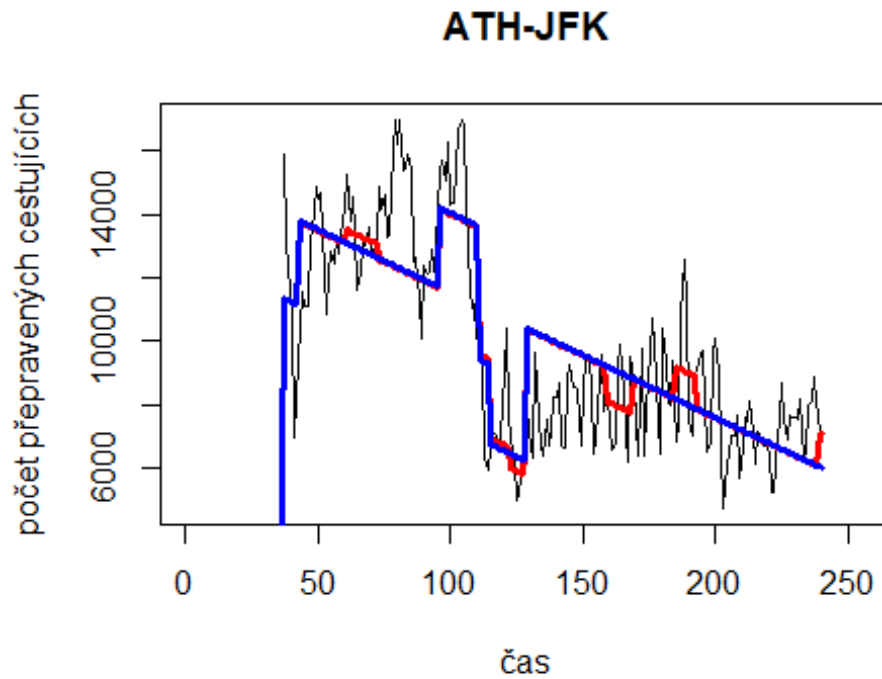
##
## Call:
## lm(formula = data$ATH_JFK_30 ~ data$X2003_SARS)
##
## Residuals:
##   Min       1Q   Median       3Q      Max
## -18433   -5569   -1462    5785   26371
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    18433         690   26.713 <2e-16 ***
## data$X2003_SARS -5992         3662  -1.636  0.104
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 8810 on 167 degrees of freedom
## (87 observations deleted due to missingness)
## Multiple R-squared:  0.01578, Adjusted R-squared:  0.009886
## F-statistic: 2.677 on 1 and 167 DF, p-value: 0.1037

```

```

plot(data$MAN_SIN_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících", main = "ATH-JFK")
fit <- c(rep(0, 36), lm_MAN_SIN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_MAN_SIN2$fitted.values)
lines(fit2, col="blue", lwd=3)

```



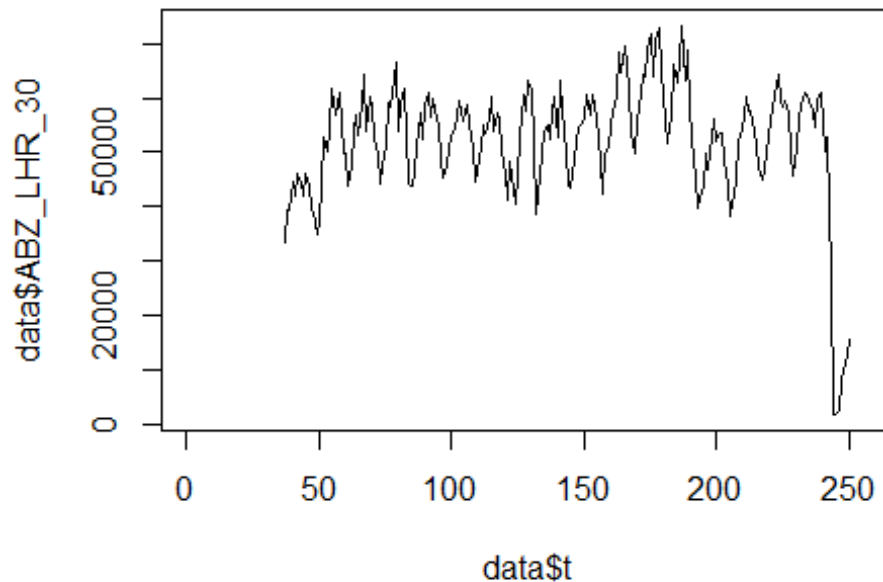
Spojeni Aberdeen

-> LHR

```

data$ABZ_LHR_30 <- data$ABZ_LHR/data$days * 30
plot(data$ABZ_LHR_30~data$t, t="l")

```



```
lm_ABZ_LHR1 <- glm(data$ABZ_LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ABZ_LHR1)
```

```
##
## Call:
## glm(formula = data$ABZ_LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -23166   -5520    526    4759   36159
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   51030.83   1828.17  27.914 < 2e-16 ***
## data$t         24.27     11.60   2.093  0.03761 *
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER     NA         NA      NA      NA
## data$X2003_SARS -11128.24   3919.13  -2.839  0.00497 **
## data$X2008_FC    -802.20   2245.30  -0.357  0.72125
## data$X2009_SF    -798.50   2625.94  -0.304  0.76137
## data$X2010_ER   -4196.48   4759.59  -0.882  0.37897
## data$X2019_CV  -31996.18   2911.05 -10.991 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 80137897)
##
## Null deviance: 2.7592e+10 on 213 degrees of freedom
## Residual deviance: 1.6589e+10 on 207 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4510.8
##
## Number of Fisher Scoring iterations: 2

lm_ABZ_LHR2 <- glm(data$ABZ_LHR_30~data$t+data$X2003_SARS+data$X2019_CV)
summary(lm_ABZ_LHR2)

##
## Call:
## glm(formula = data$ABZ_LHR_30 ~ data$t + data$X2003_SARS + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -23167 -5698 535 5042 36169
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 50511.17 1706.21 29.604 < 2e-16 ***
## data$t 26.13 11.26 2.320 0.02132 *
## data$X2003_SARS -10682.10 3869.56 -2.761 0.00628 **
## data$X2019_CV -31931.61 2900.89 -11.008 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 79636659)
##
## Null deviance: 2.7592e+10 on 213 degrees of freedom
## Residual deviance: 1.6724e+10 on 210 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4506.6
##
## Number of Fisher Scoring iterations: 2

```

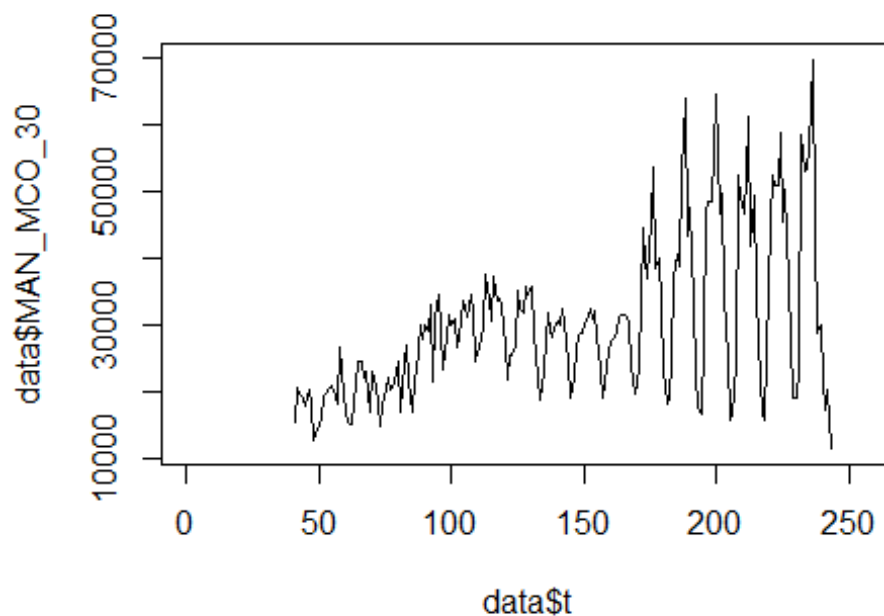
Spojeni Manchester -> Orlando

```

data$MAN_MCO_30 <- data$MAN_MCO/data$days * 30

plot(data$MAN_MCO_30~data$t, t="l")

```

```
lm_MAN_MCO1 <- glm(data$MAN_MCO_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MAN_MCO1)

##
## Call:
## glm(formula = data$MAN_MCO_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -23912.3  -4372.8    467.4   4596.4  27796.7
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   11496.90   1874.77    6.132 4.68e-09 ***
## data$t         130.00     11.89   10.931 < 2e-16 ***
## data$X2001_FC          NA          NA         NA      NA
## data$X2001_TER          NA          NA         NA      NA
## data$X2003_SARS   1156.58   6646.52    0.174  0.8620
## data$X2008_FC     4312.49   2302.31    1.873  0.0625 .
## data$X2009_SF     3282.87   2692.60    1.219  0.2242
## data$X2010_ER     -650.90   4880.41   -0.133  0.8940
## data$X2019_CV   -22550.42   4317.91   -5.223 4.49e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 84258058)
##
## Null deviance: 2.7397e+10 on 202 degrees of freedom
## Residual deviance: 1.6515e+10 on 196 degrees of freedom
## (53 observations deleted due to missingness)
## AIC: 4289.6
##
## Number of Fisher Scoring iterations: 2

lm_MAN_MCO2 <- glm(data$MAN_MCO_30~data$t+data$X2008_FC+data$X2019_CV)
summary(lm_MAN_MCO2)

##
## Call:
## glm(formula = data$MAN_MCO_30 ~ data$t + data$X2008_FC + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -24034.6 -4182.0 192.1 4702.7 27622.6
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 11995.47 1796.91 6.676 2.4e-10 ***
## data$t 128.28 11.61 11.052 < 2e-16 ***
## data$X2008_FC 4686.26 2252.33 2.081 0.0387 *
## data$X2019_CV -22633.07 4302.44 -5.261 3.7e-07 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 83767566)
##
## Null deviance: 2.7397e+10 on 202 degrees of freedom
## Residual deviance: 1.6670e+10 on 199 degrees of freedom
## (53 observations deleted due to missingness)
## AIC: 4285.5
##
## Number of Fisher Scoring iterations: 2

```

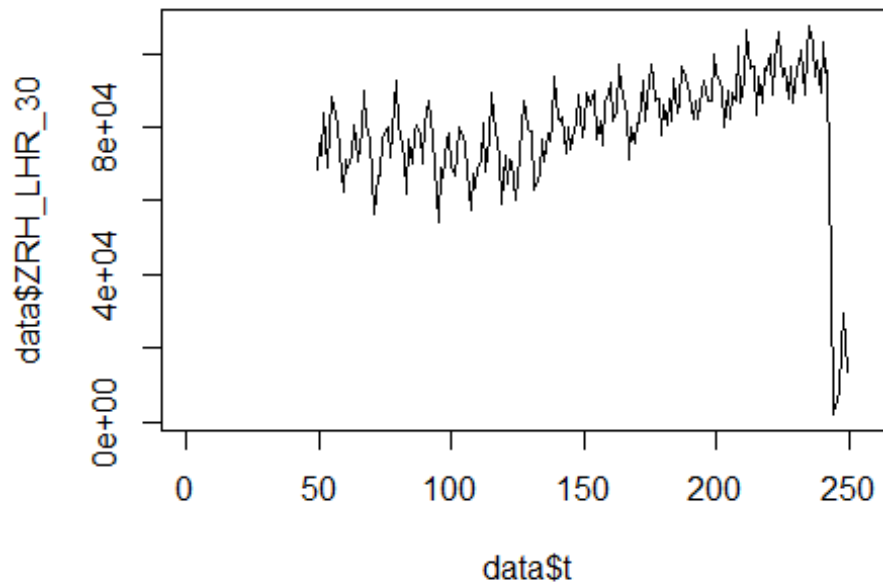
Spojeni Zurich -> LHR

```

data$ZRH_LHR_30 <- data$ZRH_LHR/data$days * 30

plot(data$ZRH_LHR_30~data$t, t="l")

```



```
lm_ZRH_LHR1 <- glm(data$ZRH_LHR_30~data$t+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ZRH_LHR1)

##
## Call:
## glm(formula = data$ZRH_LHR_30 ~ data$t + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -43349  -5300    -135    5432   58173
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   65052.69   2604.65  24.976 < 2e-16 ***
## data$t         124.82    16.25   7.683 7.37e-13 ***
## data$X2008_FC  -6215.90   2996.40  -2.074  0.0394 *
## data$X2009_SF  -3283.45   3487.15  -0.942  0.3476
## data$X2010_ER  -5977.86   6307.26  -0.948  0.3444
## data$X2019_CV -50075.60   4003.77 -12.507 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 140710860)
##
##      Null deviance: 5.3022e+10  on 200  degrees of freedom
```

```

## Residual deviance: 2.7439e+10 on 195 degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4349.5
##
## Number of Fisher Scoring iterations: 2

lm_ZRH_LHR2 <- glm(data$ZRH_LHR_30~data$t+data$X2008_FC+data$X2019_CV)
summary(lm_ZRH_LHR2)

##
## Call:
## glm(formula = data$ZRH_LHR_30 ~ data$t + data$X2008_FC + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -43349  -5370    195    5458   58186
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   64119.50   2562.31  25.024 < 2e-16 ***
## data$t         128.13     16.21   7.907 1.85e-13 ***
## data$X2008_FC -6321.82   2963.15  -2.133  0.0341 *
## data$X2019_CV -49950.76   4020.42 -12.424 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 141923702)
##
## Null deviance: 5.3022e+10 on 200 degrees of freedom
## Residual deviance: 2.7959e+10 on 197 degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4349.3
##
## Number of Fisher Scoring iterations: 2

lm_ZRH_LHR2 <- lm(data$ZRH_LHR_30~data$t+data$X2008_FC+data$X2019_CV)
summary(lm_ZRH_LHR2)

##
## Call:
## lm(formula = data$ZRH_LHR_30 ~ data$t + data$X2008_FC + data$X2019_CV)
##
## Residuals:
##   Min       1Q   Median       3Q      Max
## -43349  -5370    195    5458   58186
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   64119.50   2562.31  25.024 < 2e-16 ***
## data$t         128.13     16.21   7.907 1.85e-13 ***
## data$X2008_FC -6321.82   2963.15  -2.133  0.0341 *

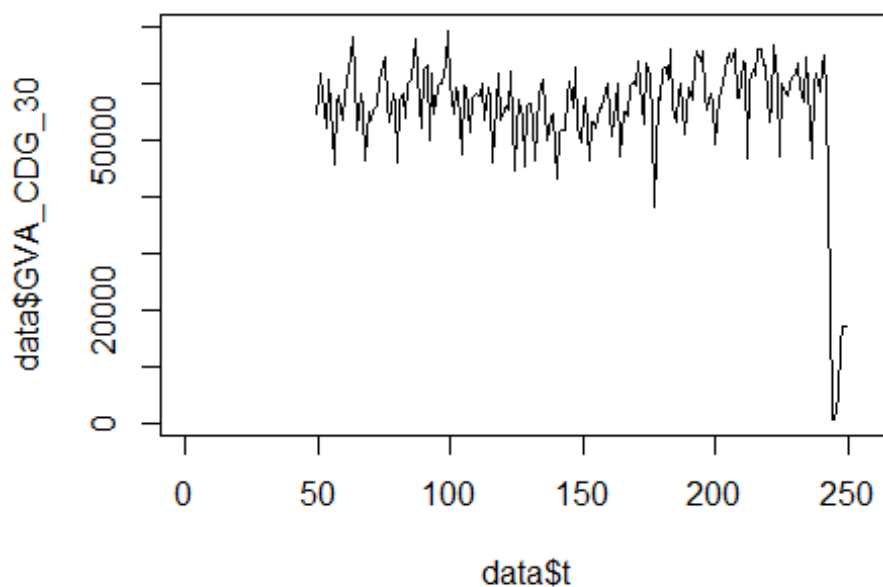
```

```
## data$X2019_CV -49950.76    4020.42 -12.424 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11910 on 197 degrees of freedom
## (55 observations deleted due to missingness)
## Multiple R-squared:  0.4727, Adjusted R-squared:  0.4647
## F-statistic: 58.86 on 3 and 197 DF,  p-value: < 2.2e-16
```

Spojeni Geneva -> CDG

```
data$GVA_CDG_30 <- data$GVA_CDG/data$days * 30
```

```
plot(data$GVA_CDG_30~data$t, t="l")
```



```
lm_GVA_CDG1 <- glm(data$GVA_CDG_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
```

```
summary(lm_GVA_CDG1)
```

```
##
## Call:
## glm(formula = data$GVA_CDG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
```

```

## -28448 -2899 269 3412 35894
##
## Coefficients: (2 not defined because of singularities)
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 55219.98 1726.21 31.989 <2e-16 ***
## data$t 14.33 10.77 1.331 0.185
## data$X2001_FC NA NA NA NA
## data$X2001_TER NA NA NA NA
## data$X2008_FC 2001.65 1985.84 1.008 0.315
## data$X2009_SF -2370.41 2311.08 -1.026 0.306
## data$X2010_ER -702.16 4180.08 -0.168 0.867
## data$X2019_CV -29524.87 2653.46 -11.127 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 61804006)
##
## Null deviance: 2.0493e+10 on 200 degrees of freedom
## Residual deviance: 1.2052e+10 on 195 degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4184.2
##
## Number of Fisher Scoring iterations: 2

lm_GVA_CDG2 <- glm(data$GVA_CDG_30~data$X2019_CV)
summary(lm_GVA_CDG2)

##
## Call:
## glm(formula = data$GVA_CDG_30 ~ data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -28448 -3602 307 3346 35851
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 57233.3 570.7 100.28 <2e-16 ***
## data$X2019_CV -28041.9 2439.7 -11.49 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 61891831)
##
## Null deviance: 2.0493e+10 on 200 degrees of freedom
## Residual deviance: 1.2316e+10 on 199 degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4180.5
##
## Number of Fisher Scoring iterations: 2

```

```

lm_GVA_CDG3 <- lm(data$GVA_CDG_30~data$X2019_CV)
summary(lm_GVA_CDG3)

##
## Call:
## lm(formula = data$GVA_CDG_30 ~ data$X2019_CV)
##
## Residuals:
##   Min     1Q Median     3Q    Max
## -28448  -3602   307   3346  35851
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   57233.3     570.7  100.28 <2e-16 ***
## data$X2019_CV -28041.9     2439.7  -11.49 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7867 on 199 degrees of freedom
## (55 observations deleted due to missingness)
## Multiple R-squared:  0.399, Adjusted R-squared:  0.396
## F-statistic: 132.1 on 1 and 199 DF,  p-value: < 2.2e-16

```

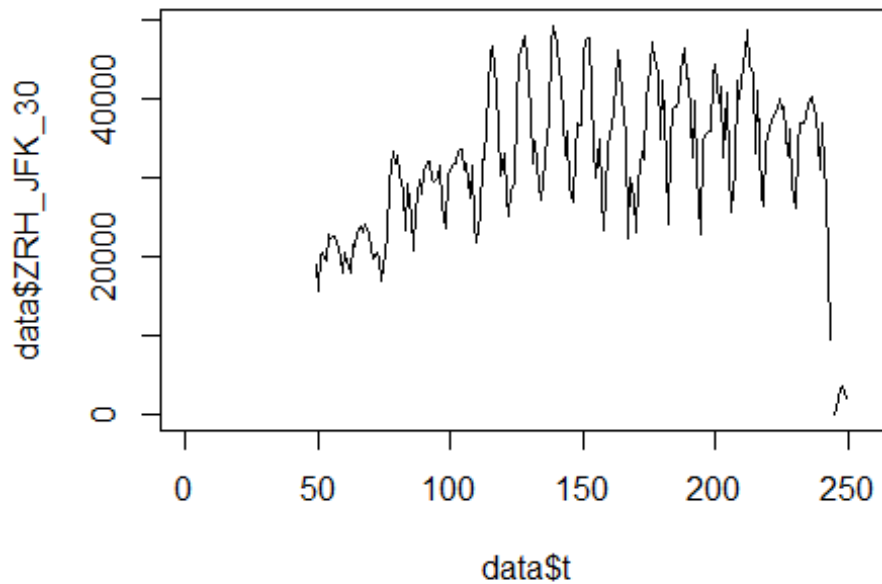
Spojeni Zurich -> JFK

```

data$ZRH_JFK_30 <- data$ZRH_JFK/data$days * 30

plot(data$ZRH_JFK_30~data$t, t="l")

```



```
lm_ZRH_JFK1 <- glm(data$ZRH_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ZRH_JFK1)
```

```
##
## Call:
## glm(formula = data$ZRH_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -14913   -4644   -1161    4004   22577
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   19375.499   1566.524   12.368 < 2e-16 ***
## data$t         91.442     9.770    9.359 < 2e-16 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER     NA           NA      NA      NA
## data$X2003_SARS    NA           NA      NA      NA
## data$X2008_FC     -5.955    1802.135  -0.003  0.99737
## data$X2009_SF     5728.052   2097.287  2.731  0.00689 **
## data$X2010_ER     1311.609   3793.391  0.346  0.72990
## data$X2019_CV   -26865.461  2502.230 -10.737 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



```

##
## (Dispersion parameter for gaussian family taken to be 50898152)
##
## Null deviance: 1.7956e+10 on 199 degrees of freedom
## Residual deviance: 9.8742e+09 on 194 degrees of freedom
## (56 observations deleted due to missingness)
## AIC: 4124.6
##
## Number of Fisher Scoring iterations: 2

lm_ZRH_JFK2 <- glm(data$ZRH_JFK_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_ZRH_JFK2)

##
## Call:
## glm(formula = data$ZRH_JFK_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -14913 -4643 -1166 4003 22577
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 19364.534 1487.099 13.022 < 2e-16 ***
## data$t 91.514 9.486 9.647 < 2e-16 ***
## data$X2009_SF 6093.481 1776.771 3.430 0.000737 ***
## data$X2019_CV -26871.952 2489.604 -10.794 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 50410555)
##
## Null deviance: 1.7956e+10 on 199 degrees of freedom
## Residual deviance: 9.8805e+09 on 196 degrees of freedom
## (56 observations deleted due to missingness)
## AIC: 4120.7
##
## Number of Fisher Scoring iterations: 2

```

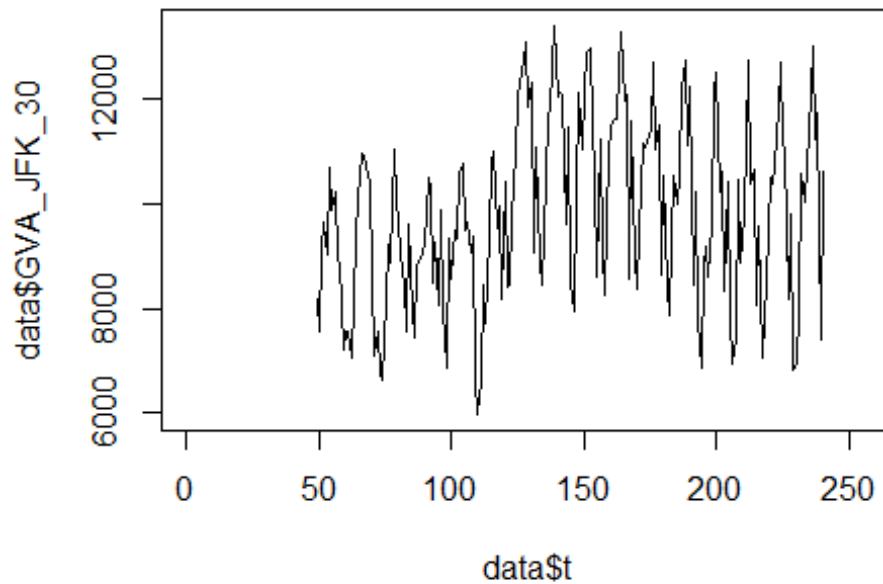
Spojeni Geneva -> JFK

```

data$GVA_JFK_30 <- data$GVA_JFK/data$days * 30

plot(data$GVA_JFK_30~data$t, t="l")

```



```
lm_GVA_JFK1 <- glm(data$GVA_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_GVA_JFK1)
```

```
##
## Call:
## glm(formula = data$GVA_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -3683.3  -1312.7    80.5   1194.5   3551.2
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   8857.006    357.492   24.775 < 2e-16 ***
## data$t         7.221      2.230    3.239  0.00142 **
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2003_SARS    NA          NA      NA      NA
## data$X2008_FC   -912.494    411.225  -2.219  0.02770 *
## data$X2009_SF    -40.475    478.573  -0.085  0.93269
## data$X2010_ER   1837.772    865.601   2.123  0.03507 *
## data$X2019_CV  -1585.901   1175.578  -1.349  0.17896
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 2650221)
##
## Null deviance: 563474083 on 191 degrees of freedom
## Residual deviance: 492941158 on 186 degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3392.5
##
## Number of Fisher Scoring iterations: 2

lm_GVA_JFK2 <- glm(data$GVA_JFK_30~data$t+data$X2008_FC+data$X2010_ER)
summary(lm_GVA_JFK2)

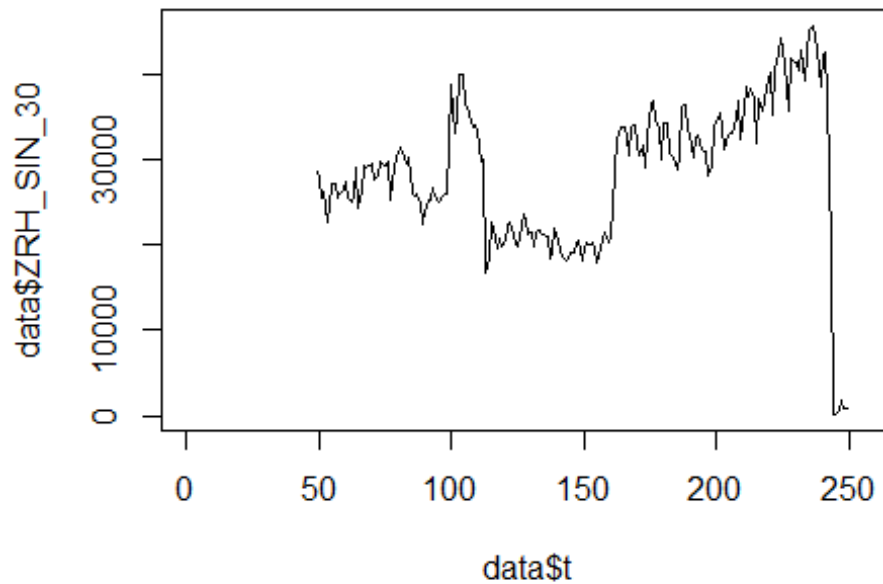
##
## Call:
## glm(formula = data$GVA_JFK_30 ~ data$t + data$X2008_FC + data$X2010_ER)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -3622.7 -1331.9 111.6 1186.2 3567.0
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 8910.356 350.217 25.442 < 2e-16 ***
## data$t 6.724 2.186 3.076 0.00241 **
## data$X2008_FC -922.129 405.711 -2.273 0.02417 *
## data$X2010_ER 1806.134 740.401 2.439 0.01564 *
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 2647764)
##
## Null deviance: 563474083 on 191 degrees of freedom
## Residual deviance: 497779705 on 188 degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3390.4
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Zurich -> Singapore

```
data$ZRH_SIN_30 <- data$ZRH_SIN/data$days * 30
```

```
plot(data$ZRH_SIN_30~data$t, t="l")
```



```
lm_ZRH_SIN1 <- glm(data$ZRH_SIN_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_ZRH_SIN1)
```

```
##
## Call:
## glm(formula = data$ZRH_SIN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -16742.0  -2563.0   793.1   3669.4  25950.4
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  17520.90   1701.67  10.296 < 2e-16 ***
## data$t       79.96     10.36   7.720 6.23e-13 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2003_SARS    NA          NA      NA      NA
## data$X2005_FLU    4601.28   2248.69   2.046 0.042099 *
## data$X2008_FC     7045.60   1756.11   4.012 8.62e-05 ***
## data$X2009_SF    -6896.97   2020.62  -3.413 0.000783 ***
## data$X2010_ER     711.81   3629.02   0.196 0.844704
## data$X2012_MERS   46.50    2511.89   0.019 0.985249
```

```

## data$X2013_FLU      -994.69      2241.93  -0.444 0.657775
## data$X2019_CV      -20175.59     2338.07  -8.629 2.33e-15 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 46560509)
##
##      Null deviance: 1.4749e+10  on 200  degrees of freedom
## Residual deviance: 8.9396e+09  on 192  degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4130.1
##
## Number of Fisher Scoring iterations: 2

lm_ZRH_SIN2 <- glm(data$ZRH_SIN_30~data$t+data$X2005_FLU+data$X2008_FC+data$X
2009_SF+data$X2019_CV)
summary(lm_ZRH_SIN2)

##
## Call:
## glm(formula = data$ZRH_SIN_30 ~ data$t + data$X2005_FLU + data$X2008_FC +
##      data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -16741.9  -2471.1    815.7   3530.9  25949.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   17487.42    1684.04  10.384 < 2e-16 ***
## data$t         79.78       10.17   7.846 2.78e-13 ***
## data$X2005_FLU 4646.24    2229.18   2.084 0.038438 *
## data$X2008_FC  7044.11    1721.43   4.092 6.26e-05 ***
## data$X2009_SF -6644.81    1719.17  -3.865 0.000151 ***
## data$X2019_CV -20100.01    2297.85  -8.747 1.02e-15 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 45901394)
##
##      Null deviance: 1.4749e+10  on 200  degrees of freedom
## Residual deviance: 8.9508e+09  on 195  degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4124.4
##
## Number of Fisher Scoring iterations: 2

lm_ZRH_SIN3 <- lm(data$ZRH_SIN_30~data$t+data$X2005_FLU+data$X2008_FC+data$X2
009_SF+data$X2019_CV)
summary(lm_ZRH_SIN3)

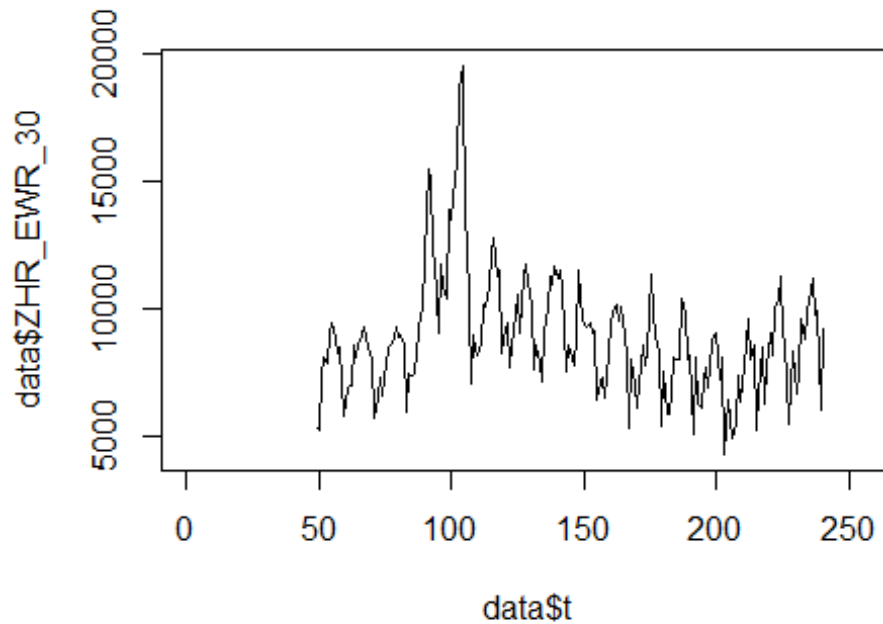
```

```
##
## Call:
## lm(formula = data$ZRH_SIN_30 ~ data$t + data$X2005_FLU + data$X2008_FC +
##     data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -16741.9  -2471.1    815.7   3530.9  25949.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   17487.42   1684.04   10.384 < 2e-16 ***
## data$t         79.78     10.17    7.846 2.78e-13 ***
## data$X2005_FLU  4646.24   2229.18    2.084 0.038438 *
## data$X2008_FC   7044.11   1721.43    4.092 6.26e-05 ***
## data$X2009_SF  -6644.81   1719.17   -3.865 0.000151 ***
## data$X2019_CV -20100.01   2297.85   -8.747 1.02e-15 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 6775 on 195 degrees of freedom
## (55 observations deleted due to missingness)
## Multiple R-squared:  0.3931, Adjusted R-squared:  0.3776
## F-statistic: 25.26 on 5 and 195 DF,  p-value: < 2.2e-16
```

Spojeni Zurich -> Newark

```
data$ZHR_EWR_30 <- data$ZHR_EWR/data$days * 30
```

```
plot(data$ZHR_EWR_30~data$t, t="l")
```



```
lm_ZHR_EWR1 <- glm(data$ZHR_EWR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ZHR_EWR1)
```

```
##
## Call:
## glm(formula = data$ZHR_EWR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4771.7  -1344.1   -123.7   1159.4   7688.4
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   8923.940    454.166   19.649 < 2e-16 ***
## data$t        -3.279      2.833   -1.158  0.249
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2003_SARS    NA          NA      NA      NA
## data$X2008_FC   3232.578    522.430    6.188 3.8e-09 ***
## data$X2009_SF    748.204    607.991    1.231  0.220
## data$X2010_ER    564.722   1099.681    0.514  0.608
## data$X2019_CV   -539.556   1493.484   -0.361  0.718
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 4277400)
##
## Null deviance: 1024874954 on 191 degrees of freedom
## Residual deviance: 795596489 on 186 degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3484.4
##
## Number of Fisher Scoring iterations: 2

lm_ZHR_EWR2 <- glm(data$ZHR_EWR_30~data$X2008_FC)
summary(lm_ZHR_EWR2)

##
## Call:
## glm(formula = data$ZHR_EWR_30 ~ data$X2008_FC)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -4935.7 -1262.0 -68.8 1075.8 7534.1
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 8506.5 157.9 53.87 < 2e-16 ***
## data$X2008_FC 3463.2 501.9 6.90 7.55e-11 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 4313383)
##
## Null deviance: 1024874954 on 191 degrees of freedom
## Residual deviance: 819542766 on 190 degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3482.1
##
## Number of Fisher Scoring iterations: 2

```

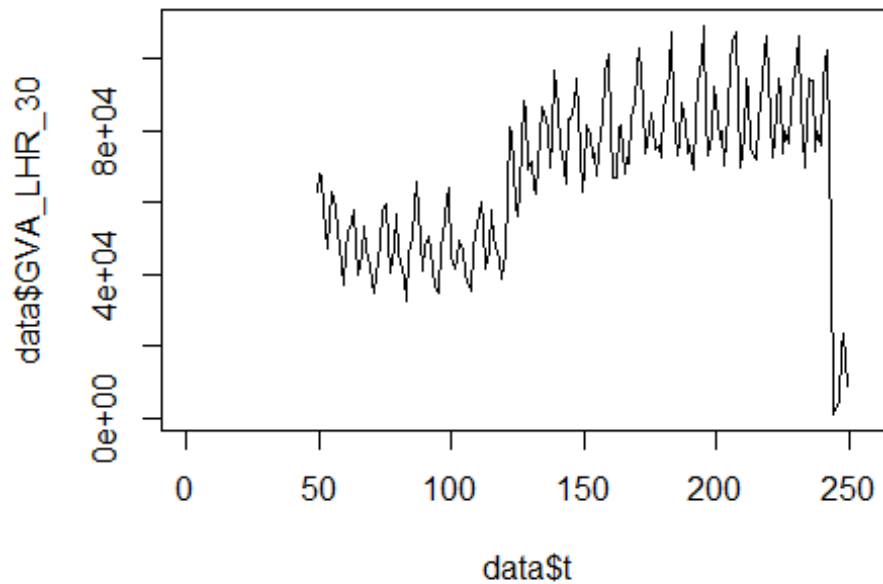
Spojeni Geneva -> LHR

```

data$GVA_LHR_30 <- data$GVA_LHR/data$days * 30

plot(data$GVA_LHR_30~data$t, t="l")

```

```
lm_GVA_LHR1 <- glm(data$GVA_LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_GVA_LHR1)
```

```
##
## Call:
## glm(formula = data$GVA_LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -42233   -9064    -464     7564    59135
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   35251.38    3258.92  10.817 < 2e-16 ***
## data$t         248.24      20.33  12.213 < 2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2003_SARS          NA          NA      NA      NA
## data$X2008_FC  -11819.94    3749.07  -3.153  0.00187 **
## data$X2009_SF   -5819.59    4363.09  -1.334  0.18382
## data$X2010_ER    8976.23    7891.58   1.137  0.25675
## data$X2019_CV -52341.73    5009.47 -10.449 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 220279593)
##
## Null deviance: 9.3553e+10 on 200 degrees of freedom
## Residual deviance: 4.2955e+10 on 195 degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4439.6
##
## Number of Fisher Scoring iterations: 2

lm_GVA_LHR2 <- glm(data$GVA_LHR_30~data$t+data$X2008_FC+data$X2019_CV)
summary(lm_GVA_LHR2)

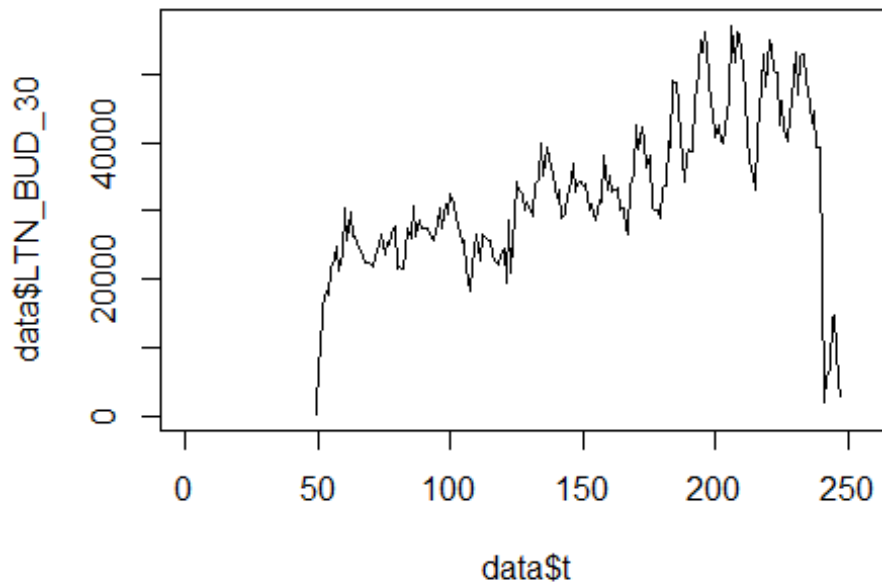
##
## Call:
## glm(formula = data$GVA_LHR_30 ~ data$t + data$X2008_FC + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -42233 -8732 -758 7424 59138
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 34779.21 3192.64 10.894 < 2e-16 ***
## data$t 249.98 20.19 12.380 < 2e-16 ***
## data$X2008_FC -12756.39 3692.07 -3.455 0.000674 ***
## data$X2019_CV -52295.84 5009.44 -10.439 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 220338182)
##
## Null deviance: 9.3553e+10 on 200 degrees of freedom
## Residual deviance: 4.3407e+10 on 197 degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4437.7
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Luton -> Budapest

```
data$LTN_BUD_30 <- data$LTN_BUD/data$days * 30
```

```
plot(data$LTN_BUD_30~data$t, t="l")
```



```
lm_LTN_BUD1 <- glm(data$LTN_BUD_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LTN_BUD1)
```

```
##
## Call:
## glm(formula = data$LTN_BUD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -18869.7  -3446.8   116.7   3040.1  27327.8
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   11704.541   1260.778    9.284 <2e-16 ***
## data$t         155.412     7.864   19.763 <2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2003_SARS          NA          NA      NA      NA
## data$X2008_FC    -387.829   1450.347   -0.267  0.7894
## data$X2009_SF   -5038.367   1687.881   -2.985  0.0032 **
## data$X2010_ER    3918.607   3052.892    1.284  0.2008
## data$X2019_CV  -37007.793   2100.003  -17.623 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 32966251)
##
## Null deviance: 2.4980e+10 on 198 degrees of freedom
## Residual deviance: 6.3625e+09 on 193 degrees of freedom
## (57 observations deleted due to missingness)
## AIC: 4017.5
##
## Number of Fisher Scoring iterations: 2

lm_LTN_BUD2 <- glm(data$LTN_BUD_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_LTN_BUD2)

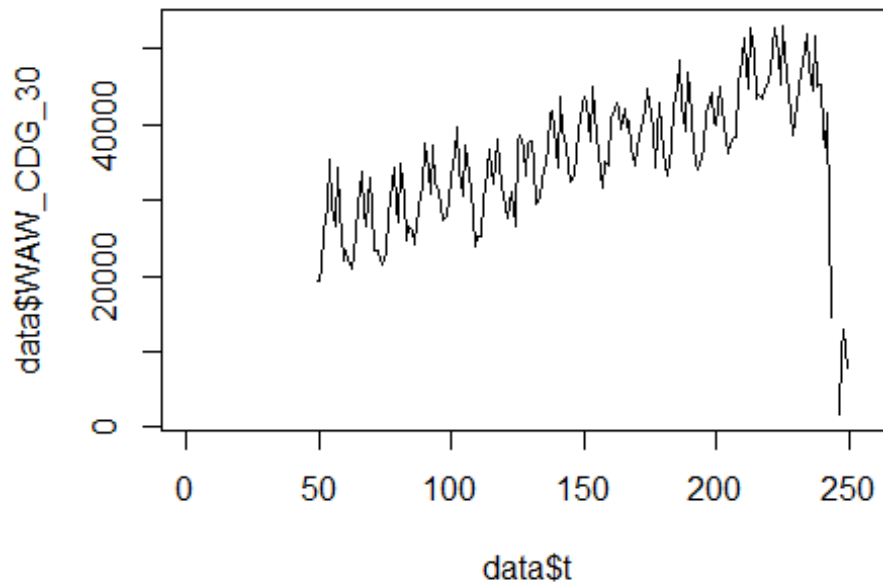
##
## Call:
## glm(formula = data$LTN_BUD_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -18772.0 -3507.3 123.5 3032.4 27330.5
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 11574.580 1202.175 9.628 < 2e-16 ***
## data$t 156.070 7.668 20.352 < 2e-16 ***
## data$X2009_SF -3984.771 1436.293 -2.774 0.00607 **
## data$X2019_CV -37037.831 2098.776 -17.647 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 32941530)
##
## Null deviance: 2.4980e+10 on 198 degrees of freedom
## Residual deviance: 6.4236e+09 on 195 degrees of freedom
## (57 observations deleted due to missingness)
## AIC: 4015.4
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Warszawa -> CDG

```
data$WAW_CDG_30 <- data$WAW_CDG/data$days * 30
```

```
plot(data$WAW_CDG_30~data$t, t="l")
```



```
lm_WAW_CDG1 <- glm(data$WAW_CDG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_WAW_CDG1)
```

```
##
## Call:
## glm(formula = data$WAW_CDG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -21789   -3555     282    3044   22619
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   19705.936   1193.745   16.508 <2e-16 ***
## data$t         116.180     7.445   15.604 <2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2003_SARS          NA          NA      NA      NA
## data$X2008_FC    -408.756   1373.287  -0.298  0.766
## data$X2009_SF   -1315.915   1598.203  -0.823  0.411
## data$X2010_ER    1264.599   2890.691  0.437  0.662
## data$X2019_CV  -24751.062   1990.745 -12.433 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 29556300)
##
## Null deviance: 1.5064e+10 on 198 degrees of freedom
## Residual deviance: 5.7044e+09 on 193 degrees of freedom
## (57 observations deleted due to missingness)
## AIC: 3995.8
##
## Number of Fisher Scoring iterations: 2

lm_WAW_CDG2 <- glm(data$WAW_CDG_30~data$t+data$X2019_CV)
summary(lm_WAW_CDG2)

##
## Call:
## glm(formula = data$WAW_CDG_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -21791.8 -3659.3 8.7 3212.2 22625.6
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 19385.285 1098.607 17.64 <2e-16 ***
## data$t 117.492 7.151 16.43 <2e-16 ***
## data$X2019_CV -24750.592 1979.287 -12.51 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 29234994)
##
## Null deviance: 1.5064e+10 on 198 degrees of freedom
## Residual deviance: 5.7301e+09 on 196 degrees of freedom
## (57 observations deleted due to missingness)
## AIC: 3990.7
##
## Number of Fisher Scoring iterations: 2

```

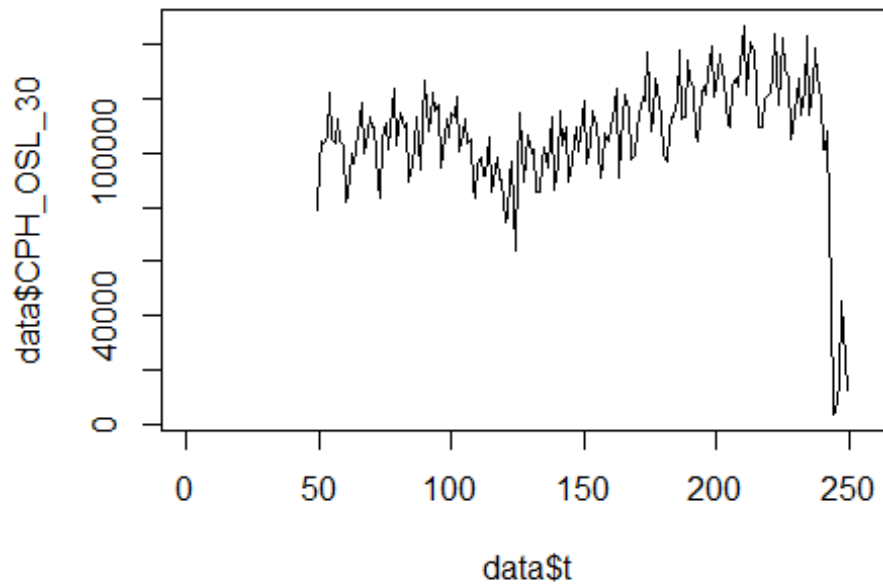
Spojeni Copenhagen -> Oslo

```

data$CPH_OSL_30 <- data$CPH_OSL/data$days * 30

plot(data$CPH_OSL_30~data$t, t="l")

```



```
lm_CPH_OSL1 <- glm(data$CPH_OSL_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_CPH_OSL1)
```

```
##
## Call:
## glm(formula = data$CPH_OSL_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -49959   -8900     578    7237   66541
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   91446.18   3332.76  27.439 < 2e-16 ***
## data$t        137.38     20.79   6.609 3.61e-10 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER     NA         NA      NA      NA
## data$X2003_SARS    NA         NA      NA      NA
## data$X2008_FC    -146.73   3834.01  -0.038 0.969510
## data$X2009_SF   -16780.05  4461.95  -3.761 0.000224 ***
## data$X2010_ER    -47.08    8070.38  -0.006 0.995351
## data$X2019_CV  -71127.78  5122.98 -13.884 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 230374810)
##
## Null deviance: 9.4619e+10 on 200 degrees of freedom
## Residual deviance: 4.4923e+10 on 195 degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4448.6
##
## Number of Fisher Scoring iterations: 2

lm_CPH_OSL2 <- glm(data$CPH_OSL_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_CPH_OSL2)

##
## Call:
## glm(formula = data$CPH_OSL_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -49959 -8890 565 7283 66542
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 91407.97 3162.88 28.900 < 2e-16 ***
## data$t 137.55 20.18 6.818 1.10e-10 ***
## data$X2009_SF -16808.33 3778.98 -4.448 1.45e-05 ***
## data$X2019_CV -71132.03 5095.57 -13.960 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 228037693)
##
## Null deviance: 9.4619e+10 on 200 degrees of freedom
## Residual deviance: 4.4923e+10 on 197 degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4444.6
##
## Number of Fisher Scoring iterations: 2

```

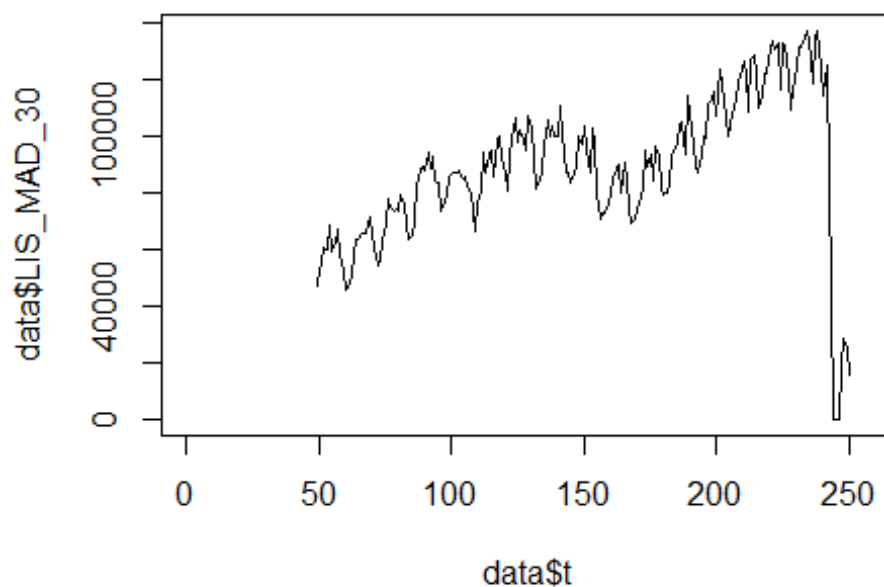
Spojeni Lisbon -> MAdrid

```

data$NIS_MAD_30 <- data$NIS_MAD/data$days * 30

plot(data$NIS_MAD_30~data$t, t="l")

```

```
lm_LIS_MAD1 <- glm(data$NIS_MAD_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LIS_MAD1)

##
## Call:
## glm(formula = data$NIS_MAD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -51775  -7879    372    8549   75048
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   41835.77   3697.33  11.315 <2e-16 ***
## data$t         335.04     23.06  14.529 <2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2003_SARS          NA          NA      NA      NA
## data$X2008_FC    3493.42   4253.53   0.821  0.4125
## data$X2009_SF    8644.81   4950.17   1.746  0.0823 .
## data$X2010_ER    8557.69   8953.44   0.956  0.3404
## data$X2019_CV -72480.43   5495.86 -13.188 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 283548198)
##
## Null deviance: 1.3565e+11 on 201 degrees of freedom
## Residual deviance: 5.5575e+10 on 196 degrees of freedom
## (54 observations deleted due to missingness)
## AIC: 4512.7
##
## Number of Fisher Scoring iterations: 2

lm_LIS_MAD2 <- glm(data$NIS_MAD_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_LIS_MAD2)

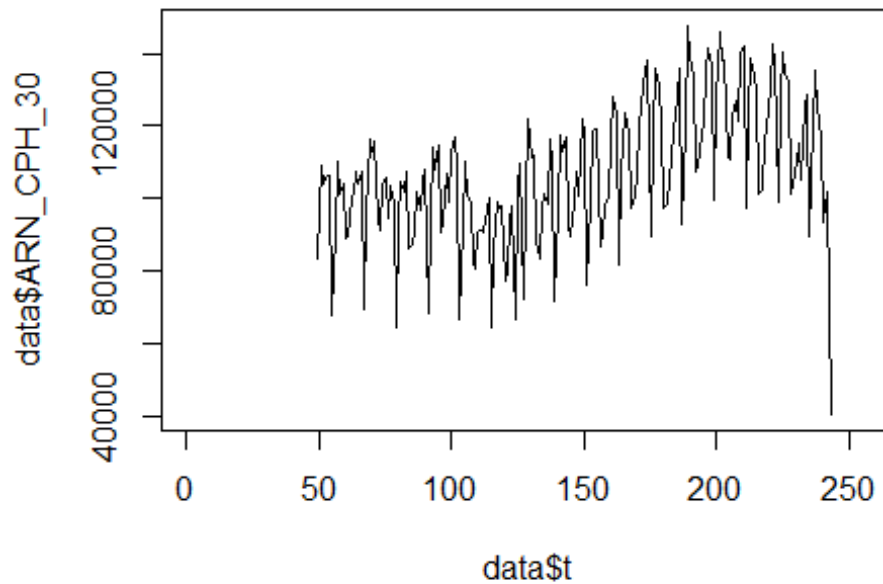
##
## Call:
## glm(formula = data$NIS_MAD_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -51769 -7620 39 9063 75027
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 42691.98 3521.40 12.124 < 2e-16 ***
## data$t 331.26 22.46 14.747 < 2e-16 ***
## data$X2009_SF 11393.45 4207.44 2.708 0.00736 **
## data$X2019_CV -72413.05 5485.82 -13.200 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 282679481)
##
## Null deviance: 1.3565e+11 on 201 degrees of freedom
## Residual deviance: 5.5971e+10 on 198 degrees of freedom
## (54 observations deleted due to missingness)
## AIC: 4510.1
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Stockholm -> Kopenhagen

```
data$ARN_CPH_30 <- data$ARN_CPH/data$days * 30
```

```
plot(data$ARN_CPH_30~data$t, t="l")
```



```
lm_ARN_CPH1 <- glm(data$ARN_CPH_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ARN_CPH1)
```

```
##
## Call:
## glm(formula = data$ARN_CPH_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -49952  -9864   3777   10294  30765
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   85015.99   3306.97  25.708 < 2e-16 ***
## data$t         168.42     20.63   8.165 4.45e-14 ***
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER     NA         NA      NA      NA
## data$X2003_SARS    NA         NA      NA      NA
## data$X2008_FC   -3641.94   3804.06  -0.957 0.33960
## data$X2009_SF  -13727.84   4427.07  -3.101 0.00222 **
## data$X2010_ER   -2400.54   8007.30  -0.300 0.76466
## data$X2019_CV  -35508.96   7095.07  -5.005 1.28e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 226787195)
##
## Null deviance: 6.7349e+10 on 194 degrees of freedom
## Residual deviance: 4.2863e+10 on 189 degrees of freedom
## (61 observations deleted due to missingness)
## AIC: 4313
##
## Number of Fisher Scoring iterations: 2

lm_ARN_CPH2 <- glm(data$ARN_CPH_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_ARN_CPH2)

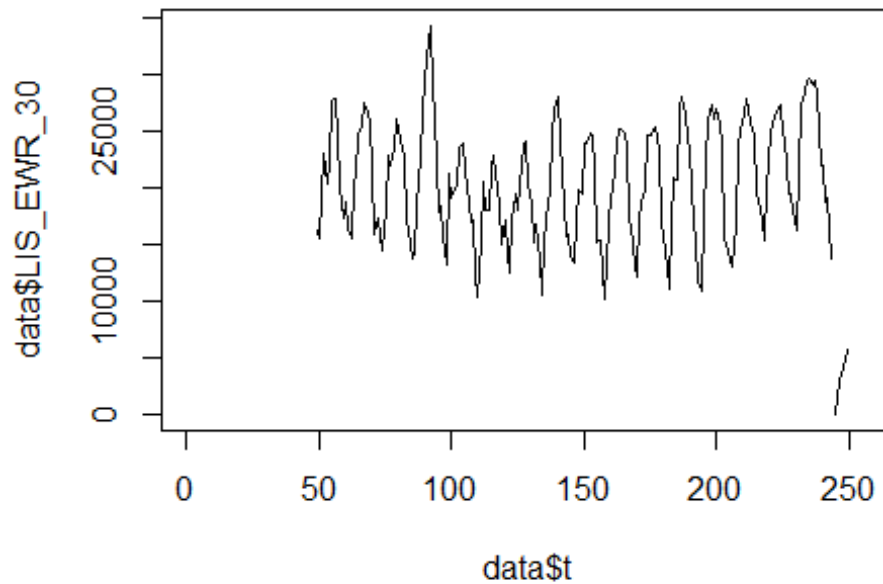
##
## Call:
## glm(formula = data$ARN_CPH_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -49960 -10144 3461 10074 30899
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 84076.50 3145.71 26.727 < 2e-16 ***
## data$t 172.68 20.07 8.606 2.77e-15 ***
## data$X2009_SF -14773.45 3758.17 -3.931 0.000118 ***
## data$X2019_CV -35595.91 7074.67 -5.031 1.12e-06 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 225533352)
##
## Null deviance: 6.7349e+10 on 194 degrees of freedom
## Residual deviance: 4.3077e+10 on 191 degrees of freedom
## (61 observations deleted due to missingness)
## AIC: 4310
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Lisbon -> Newark

```
data$NIS_EWR_30 <- data$NIS_EWR/data$days * 30
```

```
plot(data$NIS_EWR_30~data$t, t="l")
```



```
lm_LIS_EWR1 <- glm(data$LIS_EWR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LIS_EWR1)
```

```
##
## Call:
## glm(formula = data$LIS_EWR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -11142.6  -4385.8    279.4   4018.2  13556.0
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   20032.622   1149.146   17.433 < 2e-16 ***
## data$t         6.950       7.167    0.970  0.3334
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER      NA          NA      NA      NA
## data$X2003_SARS     NA          NA      NA      NA
## data$X2008_FC    -2212.115   1321.981   -1.673  0.0959 .
## data$X2009_SF    -1942.882   1538.494   -1.263  0.2082
## data$X2010_ER      735.127   2782.695    0.264  0.7919
## data$X2019_CV  -10592.861   1835.546   -5.771 3.08e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 27389118)
##
## Null deviance: 6388642500 on 199 degrees of freedom
## Residual deviance: 5313488962 on 194 degrees of freedom
## (56 observations deleted due to missingness)
## AIC: 4000.6
##
## Number of Fisher Scoring iterations: 2

lm_LIS_EWR2 <- glm(data$LIS_EWR_30~data$X2008_FC+data$X2019_CV)
summary(lm_LIS_EWR2)

##
## Call:
## glm(formula = data$LIS_EWR_30 ~ data$X2008_FC + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -11135.6 -4179.0 -47.2 3928.5 13305.9
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 20922.1 400.3 52.269 < 2e-16 ***
## data$X2008_FC -2780.9 1265.8 -2.197 0.0292 *
## data$X2019_CV -9786.5 1703.0 -5.747 3.42e-08 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 27398503)
##
## Null deviance: 6388642500 on 199 degrees of freedom
## Residual deviance: 5397505162 on 197 degrees of freedom
## (56 observations deleted due to missingness)
## AIC: 3997.8
##
## Number of Fisher Scoring iterations: 2

```

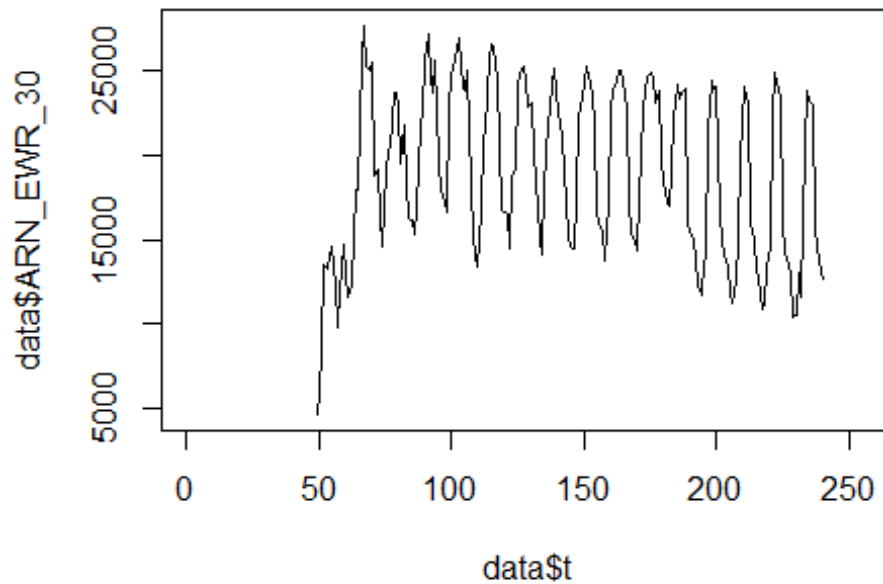
Spojeni Stockholm -> Newark

```

data$ARN_EWR_30 <- data$ARN_EWR/data$days * 30

plot(data$ARN_EWR_30~data$t, t="l")

```



```
lm_ARN_EWR1 <- glm(data$ARN_EWR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ARN_EWR1)
```

```
##
## Call:
## glm(formula = data$ARN_EWR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -14128.1  -3991.6   -171.9    4547.6   8933.4
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  18846.488   1080.747   17.438  <2e-16 ***
## data$t       -1.198     6.741   -0.178  0.859
## data$X2001_FC      NA         NA      NA     NA
## data$X2001_TER     NA         NA      NA     NA
## data$X2003_SARS    NA         NA      NA     NA
## data$X2008_FC    1873.455   1243.190    1.507  0.134
## data$X2009_SF    1649.068   1446.792    1.140  0.256
## data$X2010_ER    2093.286   2616.830    0.800  0.425
## data$X2019_CV   -5699.823   3553.935   -1.604  0.110
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 24221325)
##
##      Null deviance: 4754432965  on 191  degrees of freedom
## Residual deviance: 4505166399  on 186  degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3817.3
##
## Number of Fisher Scoring iterations: 2

lm_ARN_EWR2 <- glm(data$ARN_EWR_30~data$X2009_SF)
summary(lm_ARN_EWR2)

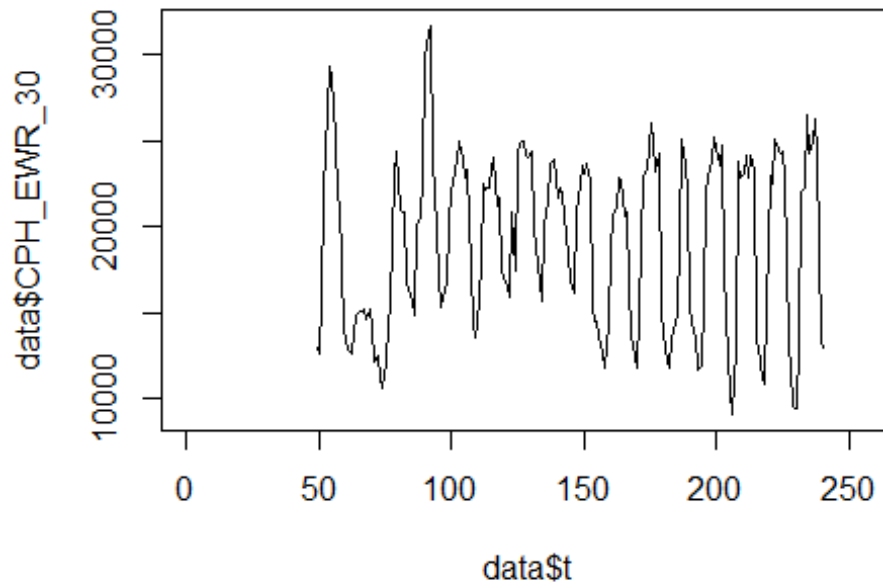
##
## Call:
## glm(formula = data$ARN_EWR_30 ~ data$X2009_SF)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -14106.6  -4205.5   -279.8    4714.0    8933.4
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   18766.3     374.9  50.063  <2e-16 ***
## data$X2009_SF  2583.9     1224.3   2.111  0.0361 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 24450112)
##
##      Null deviance: 4754432965  on 191  degrees of freedom
## Residual deviance: 4645521281  on 190  degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3815.2
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Kopenhagen -> Newark nev

```
data$CPH_EWR_30 <- data$CPH_EWR/data$days * 30
```

```
plot(data$CPH_EWR_30~data$t, t="l")
```

```
lm_CPH_EWR1 <- glm(data$CPH_EWR_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_CPH_EWR1)
```

```
##
## Call:
## glm(formula = data$CPH_EWR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -10168   -4340    1155    4038   13078
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   18144.166   1110.364   16.341  <2e-16 ***
## data$t         5.259       6.925    0.759  0.4486
## data$X2001_FC      NA         NA      NA     NA
## data$X2001_TER     NA         NA      NA     NA
## data$X2003_SARS    NA         NA      NA     NA
## data$X2008_FC     823.626   1277.259    0.645  0.5198
## data$X2009_SF    1430.627   1486.441    0.962  0.3371
## data$X2010_ER    2197.754   2688.544    0.817  0.4147
## data$X2019_CV   -6325.078   3651.330   -1.732  0.0849 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 25567080)
##
## Null deviance: 4930159220 on 191 degrees of freedom
## Residual deviance: 4755476955 on 186 degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3827.7
##
## Number of Fisher Scoring iterations: 2

lm_CPH_EWR2 <- glm(data$CPH_EWR_30~data$X2019_CV)
summary(lm_CPH_EWR2)

##
## Call:
## glm(formula = data$CPH_EWR_30 ~ data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -10115 -4577 1401 4166 12532
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 19174.6 366.8 52.277 <2e-16 ***
## data$X2019_CV -6095.9 3593.8 -1.696 0.0915 .
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 25561121)
##
## Null deviance: 4930159220 on 191 degrees of freedom
## Residual deviance: 4856613028 on 190 degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3823.7
##
## Number of Fisher Scoring iterations: 2

```

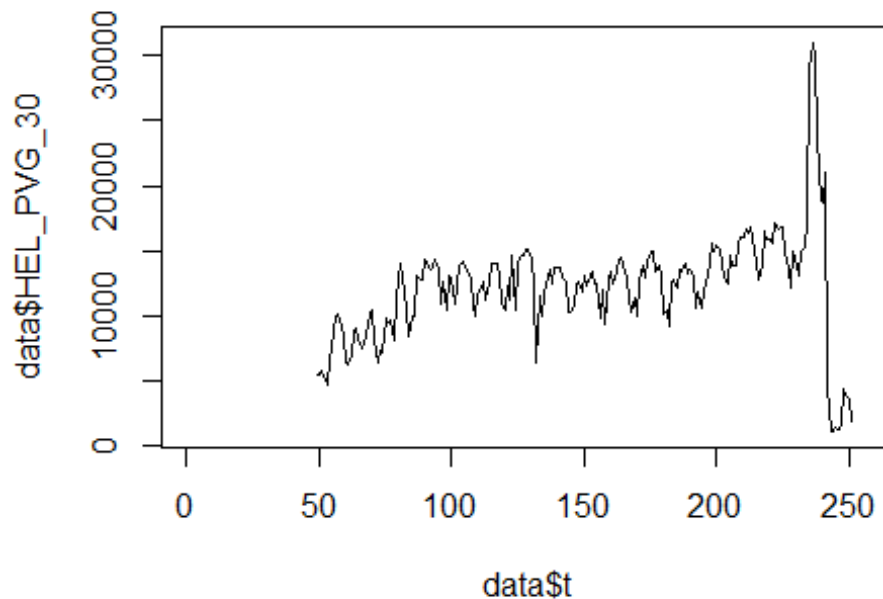
Spojeni Helsinky -> Shanghai

```

data$HEL_PVG_30 <- data$HEL_PVG/data$days * 30

plot(data$HEL_PVG_30~data$t, t="l")

```



```
lm_HEL_PVG1 <- glm(data$HEL_PVG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2014_EB+data$X2019_CV)
summary(lm_HEL_PVG1)
```

```
##
## Call:
## glm(formula = data$HEL_PVG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2014_EB + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -5670.1  -1773.0   -81.8    958.9  14805.5
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6107.285    779.130    7.839 2.95e-13 ***
## data$t         45.691      4.793    9.532 < 2e-16 ***
## data$X2001_FC          NA          NA          NA      NA
## data$X2001_TER          NA          NA          NA      NA
## data$X2003_SARS          NA          NA          NA      NA
## data$X2005_FLU   -923.681   1030.298   -0.897  0.3711
## data$X2008_FC   1154.099    805.233    1.433  0.1534
## data$X2009_SF    779.822    926.935    0.841  0.4012
## data$X2010_ER   1035.541   1663.966    0.622  0.5345
## data$X2012_MERS     5.612   1342.720    0.004  0.9967
```

```

## data$X2014_EB    -1754.560    818.312   -2.144    0.0333 *
## data$X2019_CV   -10876.027   1016.870  -10.696   < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 9788224)
##
##      Null deviance: 3513265899  on 202  degrees of freedom
## Residual deviance: 1898915425  on 194  degrees of freedom
## (53 observations deleted due to missingness)
## AIC: 3854.5
##
## Number of Fisher Scoring iterations: 2

lm_HEL_PVG2 <- glm(data$HEL_PVG_30~data$t+data$X2001_TER+data$X2014_EB+data$X
2019_CV)
summary(lm_HEL_PVG2)

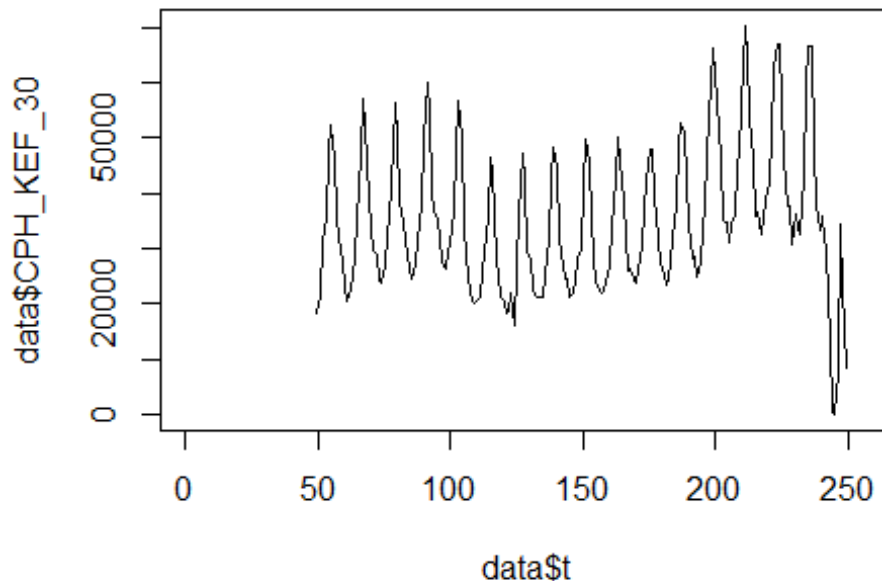
##
## Call:
## glm(formula = data$HEL_PVG_30 ~ data$t + data$X2001_TER + data$X2014_EB +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -5855.2  -1763.8   -197.1   1009.6  14803.6
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6355.880     641.312   9.911  <2e-16 ***
## data$t         45.210       4.298  10.520  <2e-16 ***
## data$X2001_TER          NA          NA      NA      NA
## data$X2014_EB  -1914.700     697.418  -2.745   0.0066 **
## data$X2019_CV -11006.669    1014.439 -10.850  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 9851481)
##
##      Null deviance: 3513265899  on 202  degrees of freedom
## Residual deviance: 1960444642  on 199  degrees of freedom
## (53 observations deleted due to missingness)
## AIC: 3851
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Kopenhagen -> Keflavik

```
data$CPH_KEF_30 <- data$CPH_KEF/data$days * 30
```

```
plot(data$CPH_KEF_30~data$t, t="l")
```



```
lm_CPH_KEF1 <- glm(data$CPH_KEF_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_CPH_KEF1)
```

```
##
## Call:
## glm(formula = data$CPH_KEF_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -19757   -8925   -2876    8187   28886
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   27207.83   2603.88  10.449 < 2e-16 ***
## data$t         67.25     16.24   4.141 5.15e-05 ***
## data$X2001_FC      NA         NA      NA     NA
## data$X2001_TER     NA         NA      NA     NA
## data$X2003_SARS    NA         NA      NA     NA
## data$X2008_FC    -1735.29   2995.51  -0.579  0.563
```

```

## data$X2009_SF      -5547.80    3486.11  -1.591    0.113
## data$X2010_ER      -389.83    6305.38  -0.062    0.951
## data$X2019_CV     -23911.62    4002.58  -5.974 1.08e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 140627190)
##
##      Null deviance: 3.3932e+10  on 200  degrees of freedom
## Residual deviance: 2.7422e+10  on 195  degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4349.4
##
## Number of Fisher Scoring iterations: 2

lm_CPH_KEF2 <- glm(data$CPH_KEF_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_CPH_KEF2)

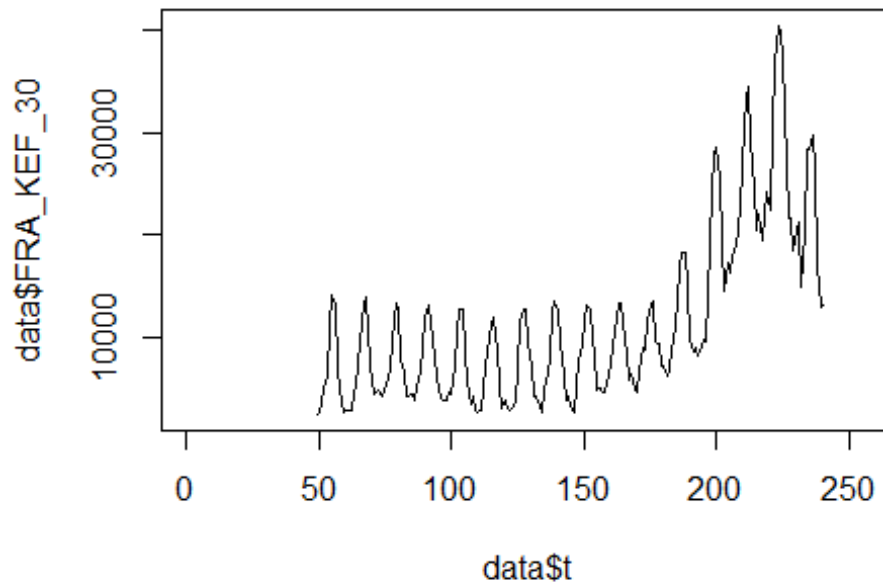
##
## Call:
## glm(formula = data$CPH_KEF_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -19759   -8690   -2796    7889   28903
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  26754.84   2473.27  10.818 < 2e-16 ***
## data$t         69.31     15.78   4.393 1.82e-05 ***
## data$X2009_SF -5835.60   2955.04  -1.975  0.0497 *
## data$X2019_CV -23962.73   3984.58  -6.014 8.66e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 139439360)
##
##      Null deviance: 3.3932e+10  on 200  degrees of freedom
## Residual deviance: 2.7470e+10  on 197  degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 4345.8
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Frankfurt -> Keflavik

```
data$FRA_KEF_30 <- data$FRA_KEF/data$days * 30
```

```
plot(data$FRA_KEF_30~data$t, t="l")
```



```
lm_FRA_KEF1 <- glm(data$FRA_KEF_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_FRA_KEF1)

##
## Call:
## glm(formula = data$FRA_KEF_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -9907.2  -4289.2  -451.4   2853.5  20493.4
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -2808.950   1341.683  -2.094  0.0377 *
## data$t       102.160     8.368   12.208 <2e-16 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER     NA           NA      NA      NA
## data$X2008_FC  -1316.011   1543.347  -0.853  0.3949
## data$X2009_SF  -1971.791   1796.107  -1.098  0.2737
## data$X2010_ER   -434.481   3248.641  -0.134  0.8938
## data$X2019_CV  -8641.157   4412.000  -1.959  0.0517 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 37329320)
```

```

##
##      Null deviance: 1.3404e+10  on 191  degrees of freedom
## Residual deviance: 6.9433e+09  on 186  degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 3900.4
##
## Number of Fisher Scoring iterations: 2

lm_FRA_KEF2 <- glm(data$FRA_KEF_30~data$X2008_FC+data$X2009_SF)
summary(lm_FRA_KEF2)

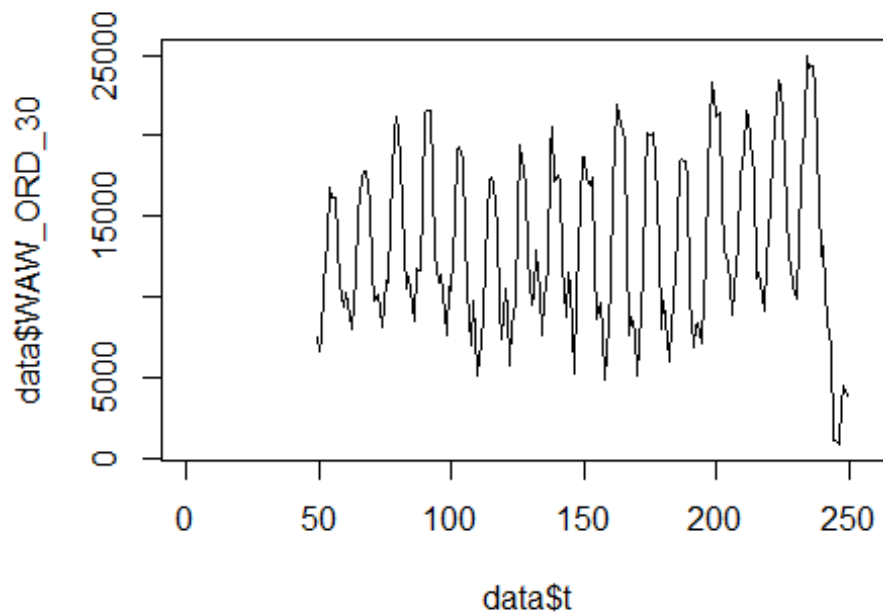
##
## Call:
## glm(formula = data$FRA_KEF_30 ~ data$X2008_FC + data$X2009_SF)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -9950   -5598   -2727    3793   27997
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    12468.9      640.1  19.481 < 2e-16 ***
## data$X2008_FC  -5385.8      1983.9  -2.715  0.00725 **
## data$X2009_SF  -4257.8      2032.4  -2.095  0.03750 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 66192156)
##
##      Null deviance: 1.3404e+10  on 191  degrees of freedom
## Residual deviance: 1.2510e+10  on 189  degrees of freedom
## (64 observations deleted due to missingness)
## AIC: 4007.4
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Warszawa -> Chicago O' Hare

```
data$WAW_ORD_30 <- data$WAW_ORD/data$days * 30
```

```
plot(data$WAW_ORD_30~data$t, t="l")
```

```
lm_WAW_ORD1 <- glm(data$WAW_ORD_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_WAW_ORD1)

##
## Call:
## glm(formula = data$WAW_ORD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -9338   -3962   -1218    4064    9156
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  10934.023   1068.476   10.233 < 2e-16 ***
## data$t       20.794     6.664    3.120  0.00208 **
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2008_FC  -1196.417   1229.178   -0.973  0.33159
## data$X2009_SF  -1191.113   1430.492   -0.833  0.40606
## data$X2010_ER   1645.730   2587.351    0.636  0.52548
## data$X2019_CV  -9973.364   1642.417   -6.072  6.47e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 23678669)
```

```

##
##      Null deviance: 5582867529  on 200  degrees of freedom
## Residual deviance: 4617340378  on 195  degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 3991.3
##
## Number of Fisher Scoring iterations: 2

lm_WAW_ORD2 <- glm(data$WAW_ORD_30~data$t+data$X2019_CV)
summary(lm_WAW_ORD2)

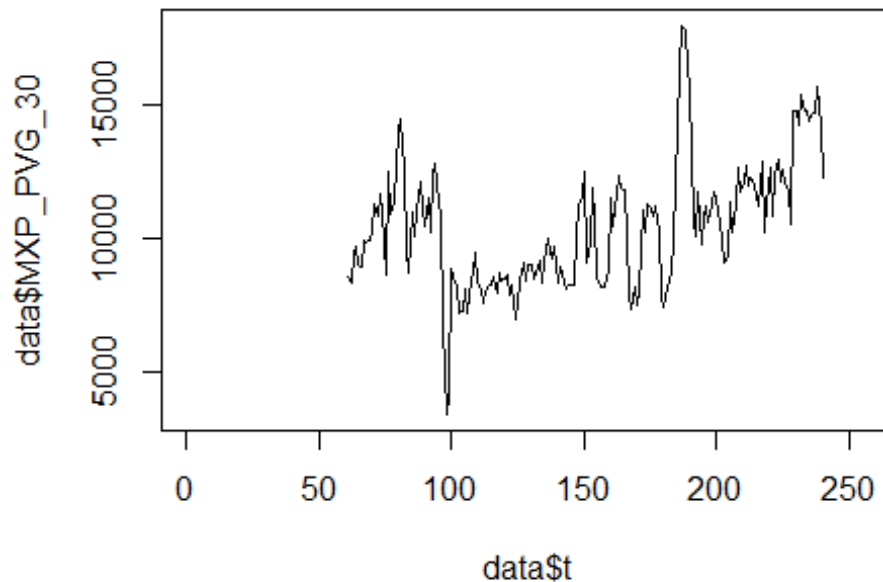
##
## Call:
## glm(formula = data$WAW_ORD_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -9206   -3929   -1020    4248    9150
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   10434.21     986.34  10.579 < 2e-16 ***
## data$t         22.96         6.42   3.576 0.000439 ***
## data$X2019_CV -10001.74    1637.89  -6.106 5.29e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 23565336)
##
##      Null deviance: 5582867529  on 200  degrees of freedom
## Residual deviance: 4665936516  on 198  degrees of freedom
## (55 observations deleted due to missingness)
## AIC: 3987.4
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Malpensa -> Shanghai

```
data$MXP_PVG_30 <- data$MXP_PVG/data$days * 30
```

```
plot(data$MXP_PVG_30~data$t, t="l")
```



```
lm_MXP_PVG1 <- glm(data$MXP_PVG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_MXP_PVG1)
```

```
##
## Call:
## glm(formula = data$MXP_PVG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##     data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4886.2  -1096.8   112.1   1212.2  4730.3
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   8689.969    565.824   15.358 < 2e-16 ***
## data$t         12.984      3.297    3.938 0.000119 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER     NA           NA      NA      NA
## data$X2003_SARS    NA           NA      NA      NA
## data$X2005_FLU   107.804    637.351    0.169 0.865884
## data$X2008_FC  -2023.796    485.492   -4.169 4.86e-05 ***
## data$X2009_SF  -1344.022    544.815   -2.467 0.014613 *
## data$X2010_ER   -908.377    966.439   -0.940 0.348583
## data$X2012_MERS  3735.824    668.693    5.587 8.96e-08 ***
```

```

## data$X2013_FLU    -422.519    598.399   -0.706  0.481098
## data$X2019_CV     1475.890    1319.113    1.119  0.264773
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3299596)
##
##      Null deviance: 1004783532  on 179  degrees of freedom
## Residual deviance:  564230886  on 171  degrees of freedom
## (76 observations deleted due to missingness)
## AIC: 3223.3
##
## Number of Fisher Scoring iterations: 2

lm_MXP_PVG2 <- glm(data$MXP_PVG_30~data$t+data$X2008_FC+data$X2009_SF+data$X2
012_MERS)
summary(lm_MXP_PVG2)

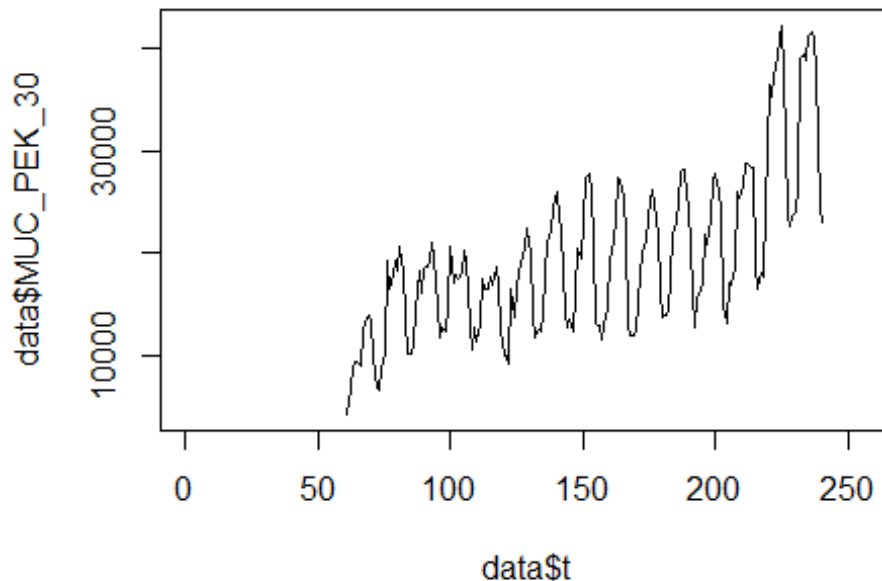
##
## Call:
## glm(formula = data$MXP_PVG_30 ~ data$t + data$X2008_FC + data$X2009_SF +
##      data$X2012_MERS)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -4887.2  -1126.0    83.7   1209.6   4757.7
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    8639.473    462.408  18.684 < 2e-16 ***
## data$t          13.270     2.788   4.760 4.05e-06 ***
## data$X2008_FC  -1950.169    461.744  -4.223 3.86e-05 ***
## data$X2009_SF  -1596.346    460.437  -3.467 0.000662 ***
## data$X2012_MERS 3732.482    663.784   5.623 7.30e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 3276551)
##
##      Null deviance: 1004783532  on 179  degrees of freedom
## Residual deviance:  573396445  on 175  degrees of freedom
## (76 observations deleted due to missingness)
## AIC: 3218.2
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Munchen -> Peking

```
data$MUC_PEK_30 <- data$MUC_PEK/data$days * 30
```

```
plot(data$MUC_PEK_30~data$t, t="l")
```



```
lm_MUC_PEK1 <- glm(data$MUC_PEK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012_MERS+data$X2013_FLU+data$X2019_CV)
```

```
summary(lm_MUC_PEK1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$MUC_PEK_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
## data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +  
## data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -12162.3  -4347.3    302.1   3630.2  14712.3
```

```
##
```

```
## Coefficients: (3 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)   4783.84   1825.79    2.620  0.00958 **  
## data$t        101.02     10.64    9.495 < 2e-16 ***  
## data$X2001_FC          NA          NA          NA          NA  
## data$X2001_TER          NA          NA          NA          NA  
## data$X2003_SARS          NA          NA          NA          NA
```

```

## data$X2005_FLU -1752.39 2056.60 -0.852 0.39536
## data$X2008_FC 426.41 1566.58 0.272 0.78581
## data$X2009_SF -1658.64 1758.00 -0.943 0.34677
## data$X2010_ER 1228.89 3118.50 0.394 0.69402
## data$X2012_MERS -873.32 2157.73 -0.405 0.68618
## data$X2013_FLU -824.98 1930.91 -0.427 0.66974
## data$X2019_CV -5187.67 4256.50 -1.219 0.22461
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 34355958)
##
## Null deviance: 1.1127e+10 on 179 degrees of freedom
## Residual deviance: 5.8749e+09 on 171 degrees of freedom
## (76 observations deleted due to missingness)
## AIC: 3645
##
## Number of Fisher Scoring iterations: 2

lm_MUC_PEK2 <- glm(data$MUC_PEK_30~data$t)
summary(lm_MUC_PEK2)

##
## Call:
## glm(formula = data$MUC_PEK_30 ~ data$t)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -11912.3 -4279.9 176.6 3544.6 14924.7
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 4168.441 1324.881 3.146 0.00194 **
## data$t 102.813 8.321 12.356 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 33650828)
##
## Null deviance: 1.1127e+10 on 179 degrees of freedom
## Residual deviance: 5.9898e+09 on 178 degrees of freedom
## (76 observations deleted due to missingness)
## AIC: 3634.5
##
## Number of Fisher Scoring iterations: 2

lm_MUC_PEK3 <- lm(data$MUC_PEK_30~data$t)
summary(lm_MUC_PEK3)

##
## Call:

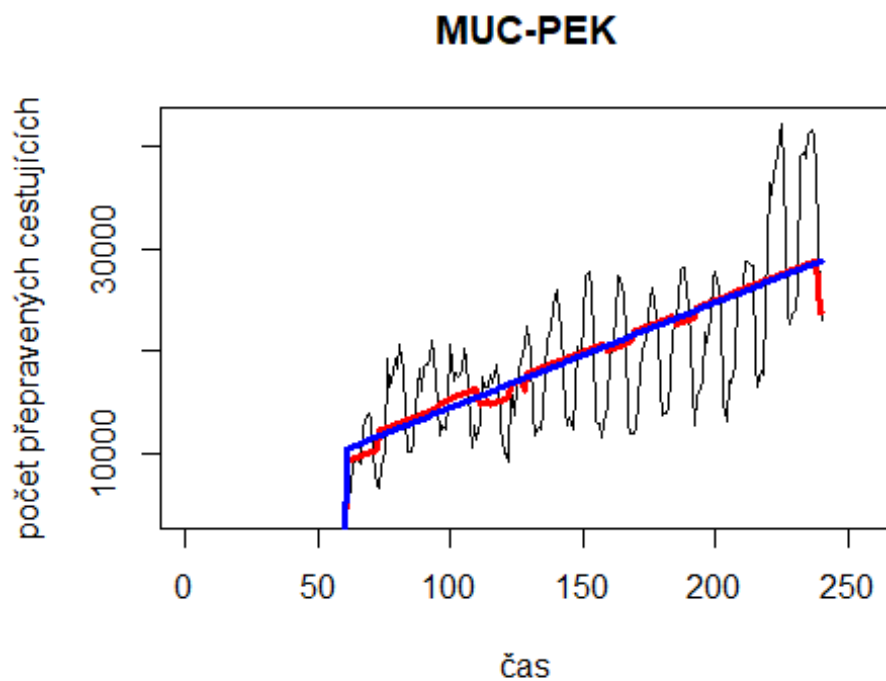
```

```

## lm(formula = data$MUC_PEK_30 ~ data$t)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -11912.3  -4279.9   176.6   3544.6  14924.7
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  4168.441   1324.881    3.146  0.00194 **
## data$t       102.813     8.321   12.356 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 5801 on 178 degrees of freedom
## (76 observations deleted due to missingness)
## Multiple R-squared:  0.4617, Adjusted R-squared:  0.4587
## F-statistic: 152.7 on 1 and 178 DF,  p-value: < 2.2e-16

plot(data$MUC_PEK_30, type="l", xlab="čas", ylab="počet přepravených cestujících h", main="MUC-PEK")
fit <- c(rep(0,60), lm_MUC_PEK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 60), lm_MUC_PEK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

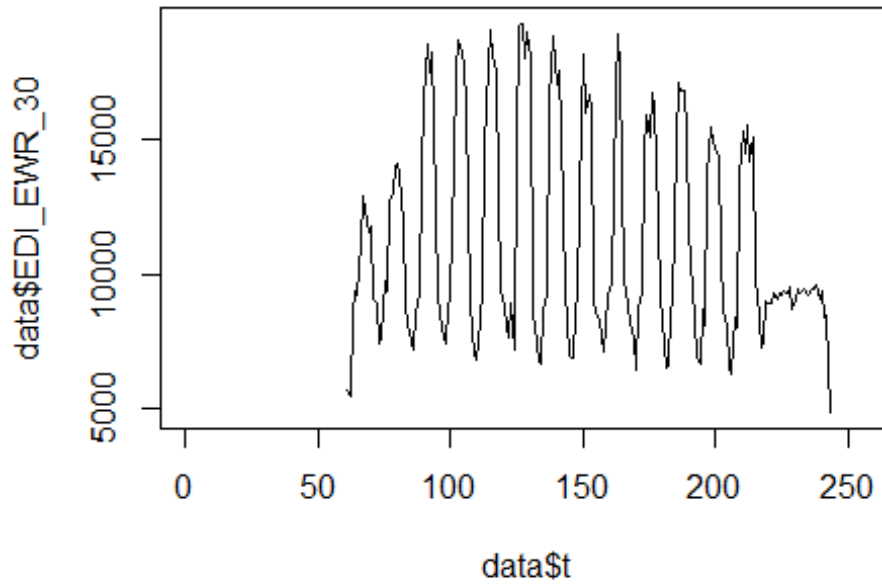


Edinburgh -> Newark

Spojeni

```
data$EDI_EWR_30 <- data$EDI_EWR/data$days * 30
```

```
plot(data$EDI_EWR_30~data$t, t="l")
```



```
lm_EDIEWR1 <- glm(data$EDI_EWR_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_EDIEWR1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$EDI_EWR_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
## -6702  -2808  -1474    3966   7841
```

```
##
```

```
## Coefficients: (3 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  12138.674   1000.843   12.128 <2e-16 ***
## data$t       -6.077      6.029   -1.008  0.315
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER      NA          NA      NA      NA
## data$X2003_SARS      NA          NA      NA      NA
## data$X2008_FC     48.217   1001.771   0.048  0.962
## data$X2009_SF    1640.871  1150.096   1.427  0.155
```



```

## data$X2010_ER      866.418   2067.353   0.419   0.676
## data$X2019_CV     -2627.389   1838.412  -1.429   0.155
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 15111858)
##
##      Null deviance: 2820547710  on 182  degrees of freedom
## Residual deviance: 2674798923  on 177  degrees of freedom
## (73 observations deleted due to missingness)
## AIC: 3552.4
##
## Number of Fisher Scoring iterations: 2

lm_EDI_EWR2 <- glm(data$EDI_EWR_30~data$X2009_SF)
summary(lm_EDI_EWR2)

##
## Call:
## glm(formula = data$EDI_EWR_30 ~ data$X2009_SF)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -6248    -2741    -1749     3860     7943
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    11118.2      303.1  36.686  <2e-16 ***
## data$X2009_SF    2186.5       966.3   2.263  0.0248 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 15154448)
##
##      Null deviance: 2820547710  on 182  degrees of freedom
## Residual deviance: 2742955088  on 181  degrees of freedom
## (73 observations deleted due to missingness)
## AIC: 3549
##
## Number of Fisher Scoring iterations: 2

```

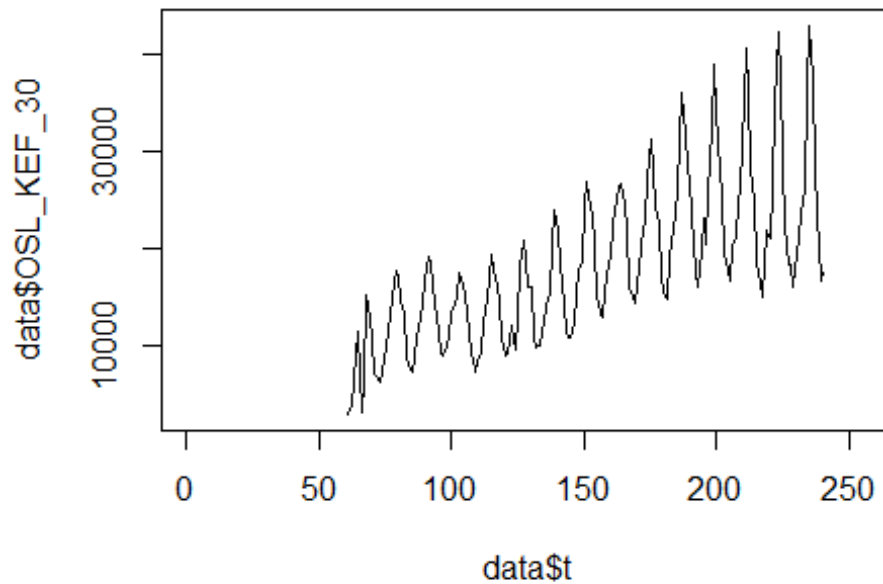
Spojeni Oslo -> Keflavik

```

data$OSL_KEF_30 <- data$OSL_KEF/data$days * 30

plot(data$OSL_KEF_30~data$t, t="l")

```



```
lm_OSL_KEF1 <- glm(data$OSL_KEF_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_OSL_KEF1)
```

```
##
## Call:
## glm(formula = data$OSL_KEF_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -11566.3  -4485.5   -462.3   3634.6  15469.6
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1885.103   1436.862    1.312  0.19126
## data$t        112.604     8.656   13.009 < 2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2003_SARS          NA          NA      NA      NA
## data$X2008_FC   -1325.697   1438.181   -0.922  0.35792
## data$X2009_SF    -872.006   1651.121   -0.528  0.59808
## data$X2010_ER    -303.261   2967.968   -0.102  0.91873
## data$X2019_CV -11671.141   4036.227   -2.892  0.00432 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 31146338)
##
## Null deviance: 1.1798e+10 on 179 degrees of freedom
## Residual deviance: 5.4195e+09 on 174 degrees of freedom
## (76 observations deleted due to missingness)
## AIC: 3624.5
##
## Number of Fisher Scoring iterations: 2

lm_OSL_KEF2 <- glm(data$OSL_KEF_30~data$t+data$X2019_CV)
summary(lm_OSL_KEF2)

##
## Call:
## glm(formula = data$OSL_KEF_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -11604 -4543 -476 3420 15453
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1128.726 1281.119 0.881 0.37949
## data$t 116.070 8.104 14.323 < 2e-16 ***
## data$X2019_CV -11744.878 4017.212 -2.924 0.00391 **
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 30865245)
##
## Null deviance: 1.1798e+10 on 179 degrees of freedom
## Residual deviance: 5.4631e+09 on 177 degrees of freedom
## (76 observations deleted due to missingness)
## AIC: 3619.9
##
## Number of Fisher Scoring iterations: 2

```

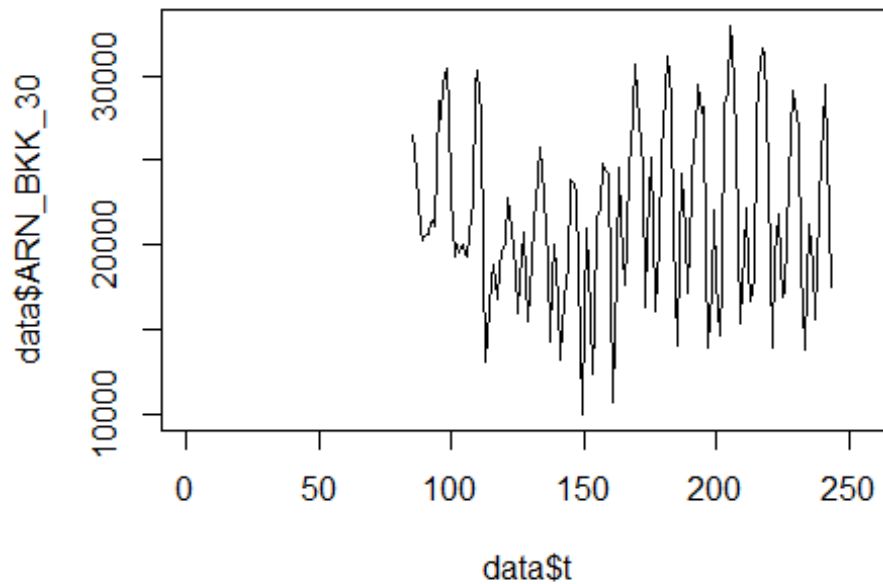
Spojeni Stockholm -> Bangkok

```

data$ARN_BKK_30 <- data$ARN_BKK/data$days * 30

plot(data$ARN_BKK_30~data$t, t="l")

```



```
lm_ARN_BKK1 <- glm(data$ARN_BKK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_ARN_BKK1)
```

```
##
## Call:
## glm(formula = data$ARN_BKK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##     data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -11724.1  -3494.6   -383.1   4100.7  10917.5
##
## Coefficients: (4 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  20757.390   1940.028   10.700  <2e-16 ***
## data$t        6.252     10.828    0.577  0.5646
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2003_SARS    NA          NA      NA      NA
## data$X2005_FLU     NA          NA      NA      NA
## data$X2008_FC    2140.948   1397.548    1.532  0.1276
## data$X2009_SF   -2900.512   1508.367   -1.923  0.0564 .
## data$X2010_ER    190.834   2615.149    0.073  0.9419
## data$X2012_MERS  -888.068   1808.463   -0.491  0.6241
```

```

## data$X2013_FLU  -1246.345  1628.957  -0.765  0.4454
## data$X2019_CV   2691.315  2363.513   1.139  0.2566
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 24124583)
##
## Null deviance: 3905134821 on 158 degrees of freedom
## Residual deviance: 3642812064 on 151 degrees of freedom
## (97 observations deleted due to missingness)
## AIC: 3163.8
##
## Number of Fisher Scoring iterations: 2

lm_ARN_BKK2 <- glm(data$ARN_BKK_30~data$X2009_SF)
summary(lm_ARN_BKK2)

##
## Call:
## glm(formula = data$ARN_BKK_30 ~ data$X2009_SF)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -12037.8  -3294.3   -694.9   3628.9  10953.9
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    22002.6     412.9  53.291  <2e-16 ***
## data$X2009_SF  -2869.9     1227.1  -2.339   0.0206 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 24036098)
##
## Null deviance: 3905134821 on 158 degrees of freedom
## Residual deviance: 3773667316 on 157 degrees of freedom
## (97 observations deleted due to missingness)
## AIC: 3157.4
##
## Number of Fisher Scoring iterations: 2

```

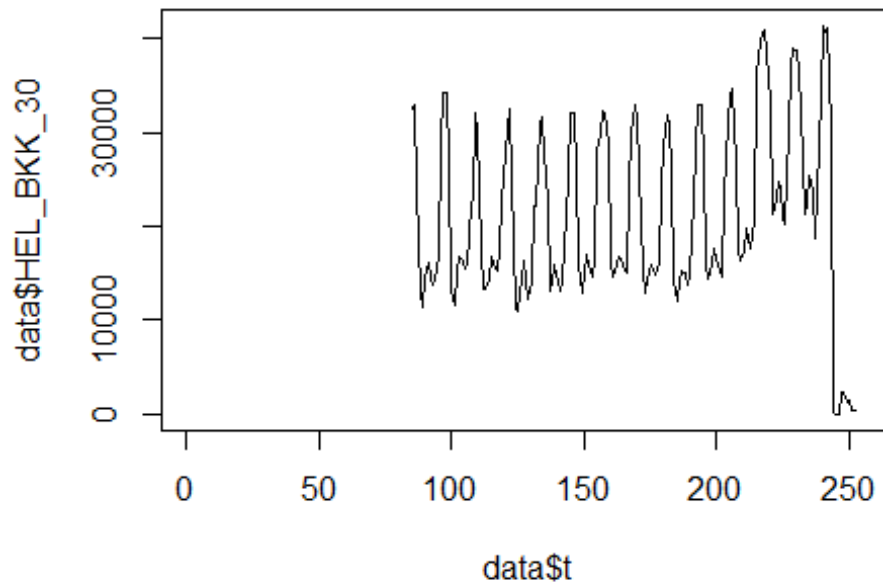
Spojeni Helsinky -> Bangkok

```

data$HEL_BKK_30 <- data$HEL_BKK/data$days * 30

plot(data$HEL_BKK_30~data$t, t="l")

```



```
lm_HEL_BKK1 <- glm(data$HEL_BKK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_HEL_BKK1)
```

```
##
## Call:
## glm(formula = data$HEL_BKK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -14015   -6862   -2733    7508   27677
##
## Coefficients: (4 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  13903.75   3536.62   3.931 0.000125 ***
## data$t       53.69     19.74   2.720 0.007252 **
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2003_SARS    NA          NA      NA      NA
## data$X2005_FLU     NA          NA      NA      NA
## data$X2008_FC     1494.65   2548.66   0.586 0.558403
## data$X2009_SF    -1233.55   2750.97  -0.448 0.654469
## data$X2010_ER    -4141.60   4769.71  -0.868 0.386523
## data$X2012_MERS  -7020.51   3298.40  -2.128 0.034830 *
```

```

## data$X2013_FLU    -3366.83    2971.01   -1.133  0.258815
## data$X2019_CV    -13095.73    2916.66   -4.490  1.36e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 80251149)
##
##    Null deviance: 1.4989e+10  on 167  degrees of freedom
## Residual deviance: 1.2840e+10  on 160  degrees of freedom
## (88 observations deleted due to missingness)
## AIC: 3544.3
##
## Number of Fisher Scoring iterations: 2

lm_HEL_BKK2 <- glm(data$HEL_BKK_30~data$X2019_CV)
summary(lm_HEL_BKK2)

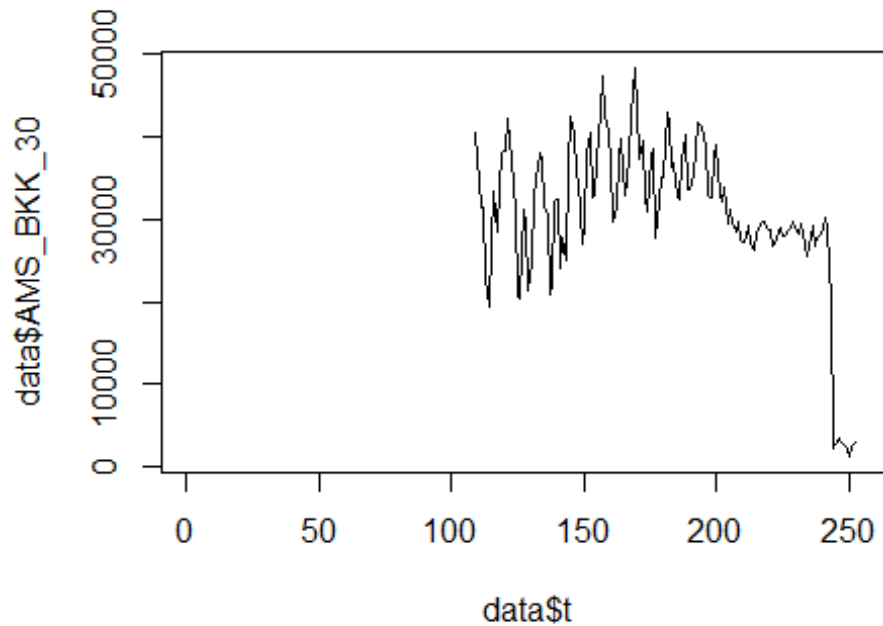
##
## Call:
## glm(formula = data$HEL_BKK_30 ~ data$X2019_CV)
##
## Deviance Residuals:
##    Min       1Q   Median       3Q      Max
## -13989   -7070   -3739    7280   27381
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    21896.9     744.9   29.395 < 2e-16 ***
## data$X2019_CV  -7908.3    2580.5   -3.065  0.00254 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 85457448)
##
##    Null deviance: 1.4989e+10  on 167  degrees of freedom
## Residual deviance: 1.4186e+10  on 166  degrees of freedom
## (88 observations deleted due to missingness)
## AIC: 3549
##
## Number of Fisher Scoring iterations: 2

```

Spojeni Amsterdam -> Bangkok

```
data$AMS_BKK_30 <- data$AMS_BKK/data$days * 30
```

```
plot(data$AMS_BKK_30~data$t, t="l")
```



```
lm_AMS_BKK1 <- glm(data$AMS_BKK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_AMS_BKK1)
```

```
##
## Call:
## glm(formula = data$AMS_BKK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -14868.5  -3421.1   -859.4   3595.1  18529.1
##
## Coefficients: (4 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  44433.90   3647.62  12.182 < 2e-16 ***
## data$t       -63.80     19.44  -3.282  0.00131 **
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2003_SARS    NA          NA      NA      NA
## data$X2005_FLU     NA          NA      NA      NA
## data$X2008_FC    -4409.84   3073.89  -1.435  0.15369
## data$X2009_SF    -3571.02   2374.45  -1.504  0.13492
## data$X2010_ER    -4731.89   3549.35  -1.333  0.18471
## data$X2012_MERS   3051.00   2400.60  1.271  0.20592
```



```

## data$X2013_FLU      2346.59      2204.78      1.064  0.28907
## data$X2019_CV     -17354.06      2212.77     -7.843  1.15e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 42409958)
##
##      Null deviance: 1.2355e+10  on 143  degrees of freedom
## Residual deviance: 5.7678e+09  on 136  degrees of freedom
## (112 observations deleted due to missingness)
## AIC: 2947.5
##
## Number of Fisher Scoring iterations: 2

lm_AMS_BKK2 <- glm(data$AMS_BKK_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_AMS_BKK2)

##
## Call:
## glm(formula = data$AMS_BKK_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -15087.9   -3468.5   -655.6    3799.4   18542.0
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   44261.06   3469.70  12.756 < 2e-16 ***
## data$t         -60.94     18.74   -3.252  0.00144 **
## data$X2009_SF -6034.66   2037.36  -2.962  0.00359 **
## data$X2019_CV -17884.03   2204.87  -8.111  2.28e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 42975324)
##
##      Null deviance: 1.2355e+10  on 143  degrees of freedom
## Residual deviance: 6.0165e+09  on 140  degrees of freedom
## (112 observations deleted due to missingness)
## AIC: 2945.6
##
## Number of Fisher Scoring iterations: 2

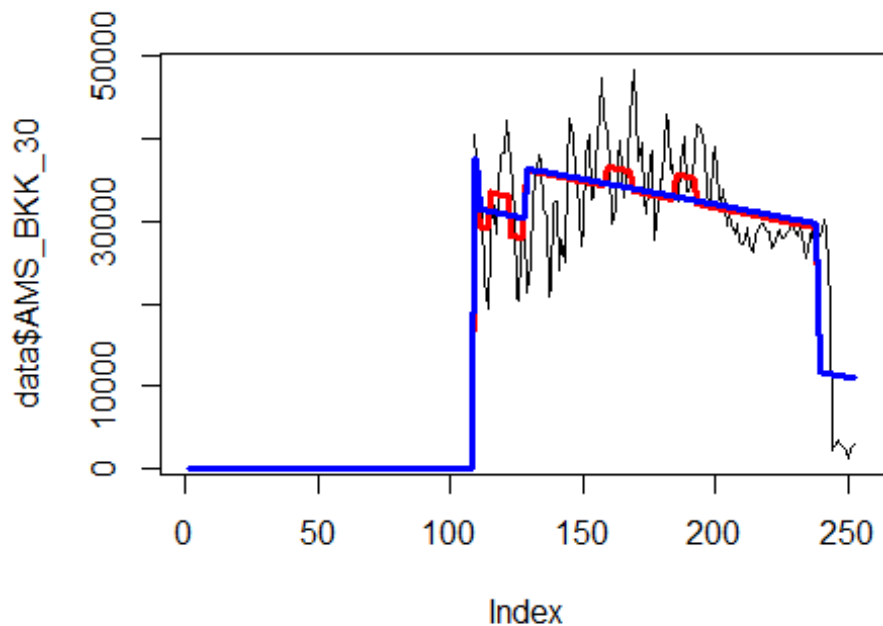
lm_AMS_BKK3 <- lm(data$AMS_BKK_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_AMS_BKK3)

##
## Call:
## lm(formula = data$AMS_BKK_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:

```

```
##      Min      1Q   Median      3Q      Max
## -15087.9 -3468.5  -655.6   3799.4 18542.0
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  44261.06   3469.70  12.756 < 2e-16 ***
## data$t       -60.94     18.74   -3.252  0.00144 **
## data$X2009_SF -6034.66   2037.36  -2.962  0.00359 **
## data$X2019_CV -17884.03   2204.87  -8.111  2.28e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 6556 on 140 degrees of freedom
## (112 observations deleted due to missingness)
## Multiple R-squared:  0.513, Adjusted R-squared:  0.5026
## F-statistic: 49.16 on 3 and 140 DF, p-value: < 2.2e-16

plot(data$AMS_BKK_30, type="l")
fit <- c(rep(0, 108), lm_ams_bkk1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 108), lm_ams_bkk2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

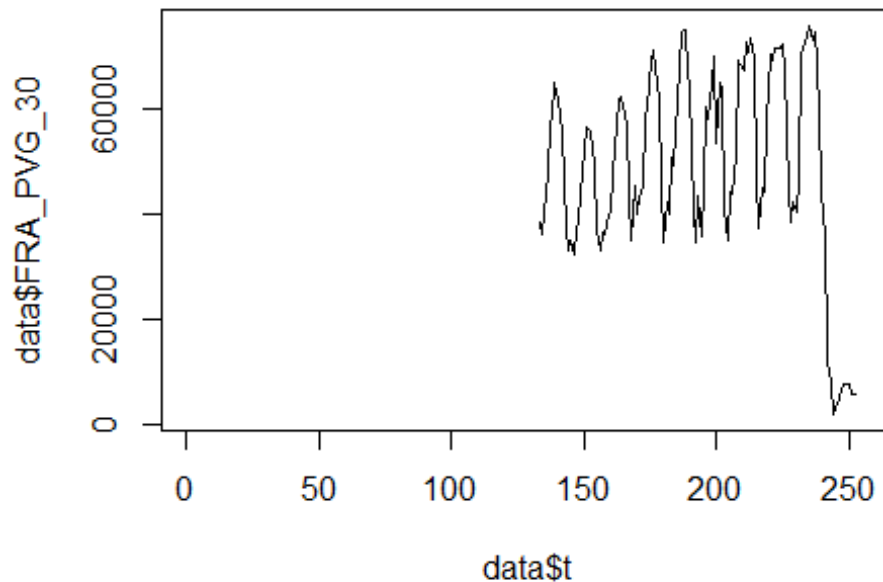


Spojeni Frankfurt

-> Shanghai

```
data$FRA_PVG_30 <- data$FRA_PVG/data$days * 30

plot(data$FRA_PVG_30~data$t, t="l")
```



```
lm_FRA_PVG1 <- glm(data$FRA_PVG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_FRA_PVG1)
```

```
##
## Call:
## glm(formula = data$FRA_PVG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -26760  -10215    186   10747   33906
##
## Coefficients: (7 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   19508.28   7839.31    2.489  0.0143 *
## data$t        182.32    41.14    4.432 2.15e-05 ***
## data$X2001_FC      NA         NA      NA     NA
## data$X2001_TER     NA         NA      NA     NA
## data$X2003_SARS    NA         NA      NA     NA
## data$X2005_FLU     NA         NA      NA     NA
## data$X2008_FC      NA         NA      NA     NA
## data$X2009_SF      NA         NA      NA     NA
## data$X2010_ER      NA         NA      NA     NA
## data$X2012_MERS    6750.49   4660.81    1.448  0.1502
```

```

## data$X2013_FLU    1098.99    4328.18    0.254    0.8000
## data$X2019_CV    -50338.48    4340.20 -11.598 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 159296000)
##
##      Null deviance: 4.1732e+10  on 119  degrees of freedom
## Residual deviance: 1.8319e+10  on 115  degrees of freedom
## (136 observations deleted due to missingness)
## AIC: 2613.8
##
## Number of Fisher Scoring iterations: 2

lm_FRA_PVG2 <- glm(data$FRA_PVG_30~data$t+data$X2019_CV)
summary(lm_FRA_PVG2)

##
## Call:
## glm(formula = data$FRA_PVG_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -23193  -10750   -116   10321   33901
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  20270.18    7527.55   2.693  0.00813 **
## data$t       181.52       40.04   4.534  1.41e-05 ***
## data$X2019_CV -50903.51    4320.23 -11.783 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 159450903)
##
##      Null deviance: 4.1732e+10  on 119  degrees of freedom
## Residual deviance: 1.8656e+10  on 117  degrees of freedom
## (136 observations deleted due to missingness)
## AIC: 2612
##
## Number of Fisher Scoring iterations: 2

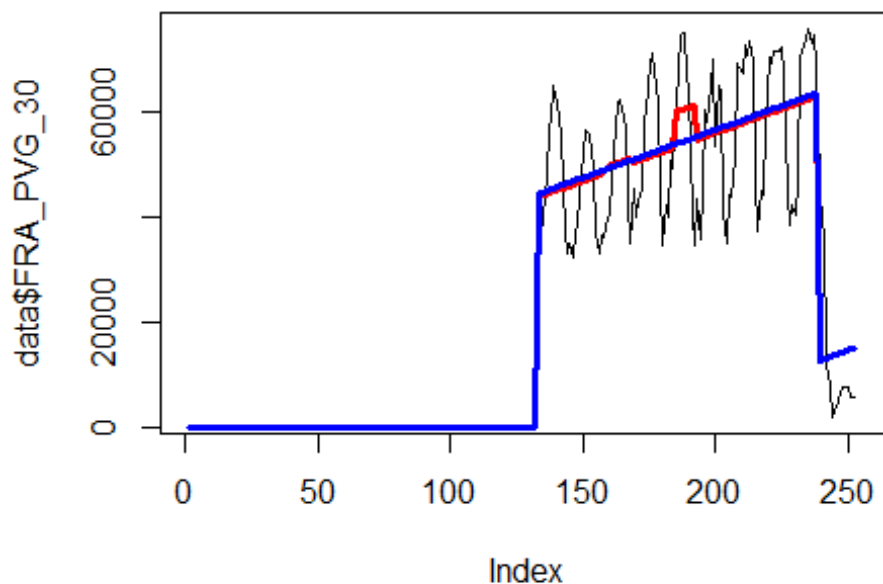
lm_FRA_PVG2 <- lm(data$FRA_PVG_30~data$t+data$X2019_CV)
summary(lm_FRA_PVG2)

##
## Call:
## lm(formula = data$FRA_PVG_30 ~ data$t + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

```
## -23193 -10750 -116 10321 33901
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 20270.18 7527.55 2.693 0.00813 **
## data$t 181.52 40.04 4.534 1.41e-05 ***
## data$X2019_CV -50903.51 4320.23 -11.783 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 12630 on 117 degrees of freedom
## (136 observations deleted due to missingness)
## Multiple R-squared: 0.553, Adjusted R-squared: 0.5453
## F-statistic: 72.36 on 2 and 117 DF, p-value: < 2.2e-16

plot(data$FRA_PVG_30, type="l")
fit <- c(rep(0,132), lm_FRA_PVG1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 132), lm_FRA_PVG2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

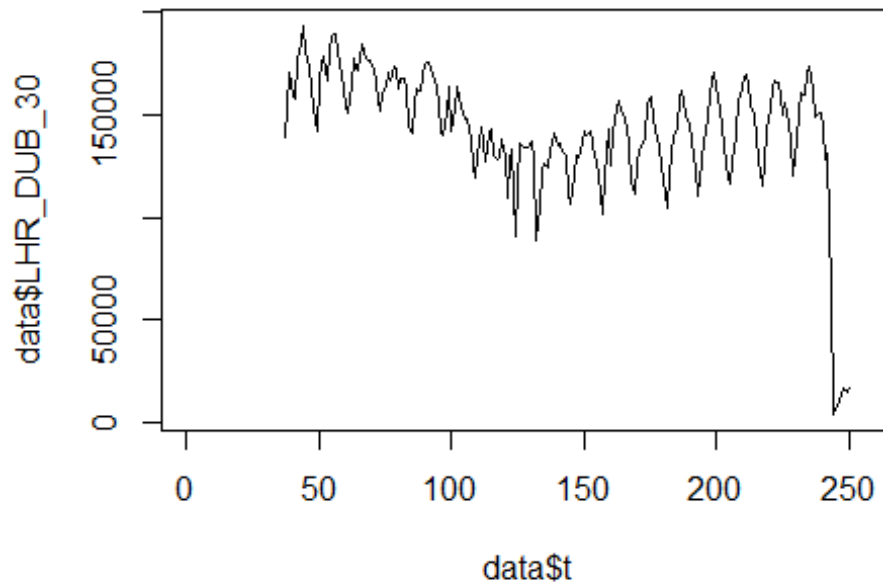


1. Spojení LONDON

Heathrow Airport -> Dublin Airport

```
data$LHR_DUB_30 <- data$LHR_DUB/data$days * 30

plot(data$LHR_DUB_30~data$t, t="l")
```



```
lm_LHR_DUB1 <- glm(data$LHR_DUB_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LHR_DUB1)

##
## Call:
## glm(formula = data$LHR_DUB_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -61670  -13462   1435   13375   91542
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  170664.90   4266.87   39.998 < 2e-16 ***
## data$t       -152.12     27.52   -5.527  9.7e-08 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER     NA          NA      NA      NA
## data$X2008_FC   -7644.96   5581.17   -1.370  0.17223
## data$X2009_SF  -18102.63  6553.76   -2.762  0.00626 **
## data$X2010_ER  -11316.39  11898.59   -0.951  0.34267
## data$X2019_CV  -75089.79   7253.70  -10.352 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 500876872)
```

```

##
## Null deviance: 2.1530e+11 on 213 degrees of freedom
## Residual deviance: 1.0418e+11 on 208 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4902
##
## Number of Fisher Scoring iterations: 2

lm_LHR_DUB2 <- glm(data$LHR_DUB_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_LHR_DUB2)

##
## Call:
## glm(formula = data$LHR_DUB_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -61004 -13495 1317 13517 91575
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 169210.71 4127.00 41.001 < 2e-16 ***
## data$t -146.15 27.16 -5.381 1.97e-07 ***
## data$X2009_SF -22203.81 5559.12 -3.994 8.98e-05 ***
## data$X2019_CV -75094.52 7261.43 -10.342 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 501978044)
##
## Null deviance: 2.1530e+11 on 213 degrees of freedom
## Residual deviance: 1.0542e+11 on 210 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 4900.6
##
## Number of Fisher Scoring iterations: 2

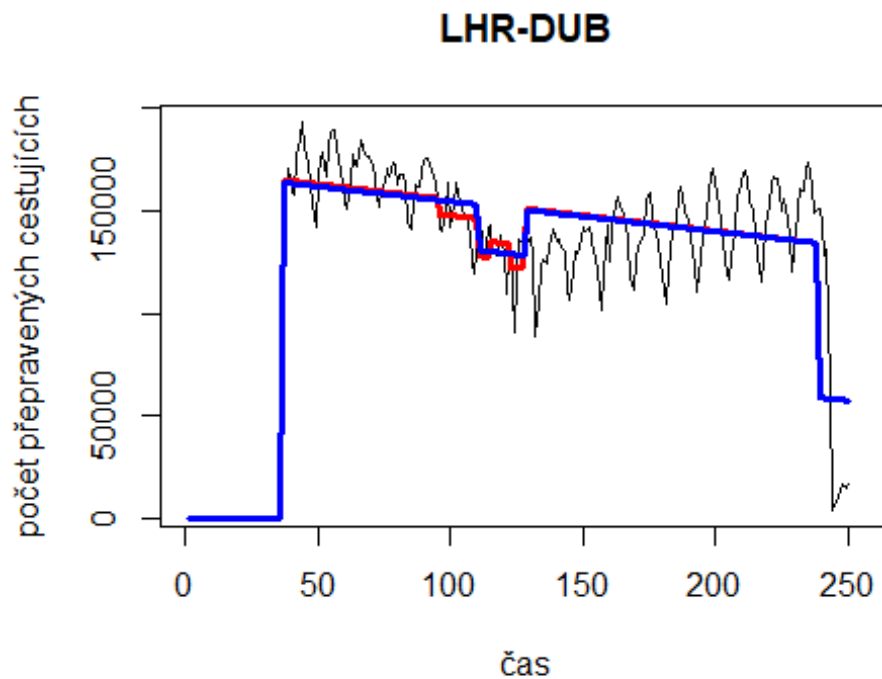
lm_LHR_DUB3 <- lm(data$LHR_DUB_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_LHR_DUB3)

##
## Call:
## lm(formula = data$LHR_DUB_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -61004 -13495 1317 13517 91575
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 169210.71 4127.00 41.001 < 2e-16 ***

```

```
## data$t          -146.15      27.16  -5.381 1.97e-07 ***
## data$X2009_SF -22203.81    5559.12  -3.994 8.98e-05 ***
## data$X2019_CV -75094.52    7261.43 -10.342 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 22400 on 210 degrees of freedom
## (42 observations deleted due to missingness)
## Multiple R-squared:  0.5104, Adjusted R-squared:  0.5034
## F-statistic: 72.97 on 3 and 210 DF,  p-value: < 2.2e-16

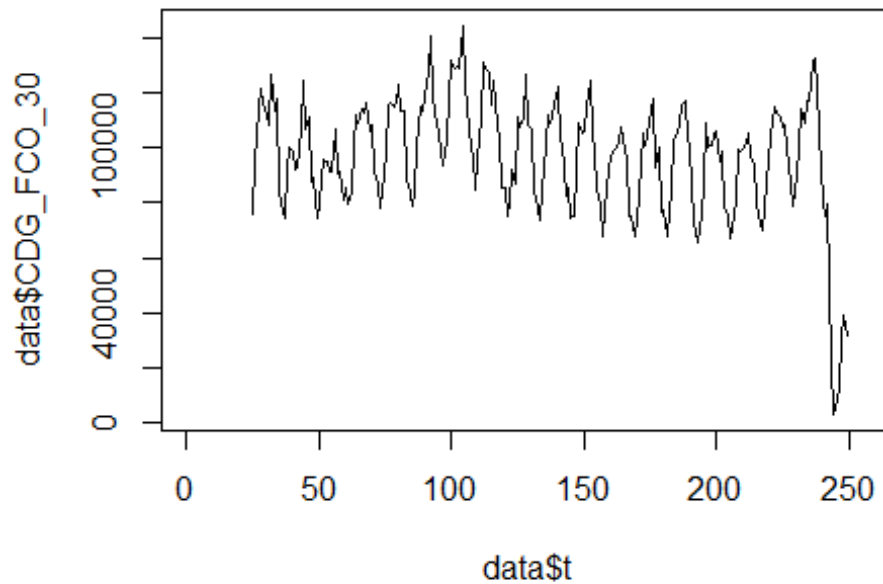
plot(data$LHR_DUB_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="LHR-DUB")
fit <- c(rep(0, 36), lm_LHR_DUB1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_LHR_DUB2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



2. Spojeni Paris Charles de Gaulle Airport -> Roma Fiumicino Airport

```
data$CDG_FCO_30 <- data$CDG_FCO/data$days * 30
```

```
plot(data$CDG_FCO_30~data$t, t="l")
```

```
lm_CDG_FCO1 <- glm(data$CDG_FCO_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_CDG_FCO1)

##
## Call:
## glm(formula = data$CDG_FCO_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -39984  -14324    2265   12403   49330
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   99364.41   3297.02  30.138 < 2e-16 ***
## data$t        -13.70     21.27  -0.644  0.520105
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER    6545.86   5683.07    1.152  0.250658
## data$X2008_FC   16471.76   4312.87    3.819  0.000175 ***
## data$X2009_SF    5175.72   5064.46    1.022  0.307928
## data$X2010_ER   -826.32   9194.71   -0.090  0.928473
## data$X2019_CV  -53166.97   5799.89   -9.167 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 299099559)
```

```

##
## Null deviance: 1.0548e+11 on 224 degrees of freedom
## Residual deviance: 6.5204e+10 on 218 degrees of freedom
## (31 observations deleted due to missingness)
## AIC: 5038.6
##
## Number of Fisher Scoring iterations: 2

lm_CDG_FC02 <- glm(data$CDG_FC0_30~data$X2008_FC+data$X2019_CV)
summary(lm_CDG_FC02)

##
## Call:
## glm(formula = data$CDG_FC0_30 ~ data$X2008_FC + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -39984 -14139 1661 13422 49399
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 98281 1239 79.343 < 2e-16 ***
## data$X2008_FC 17207 4157 4.139 4.95e-05 ***
## data$X2019_CV -55426 5360 -10.340 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 299192547)
##
## Null deviance: 1.0548e+11 on 224 degrees of freedom
## Residual deviance: 6.6421e+10 on 222 degrees of freedom
## (31 observations deleted due to missingness)
## AIC: 5034.7
##
## Number of Fisher Scoring iterations: 2

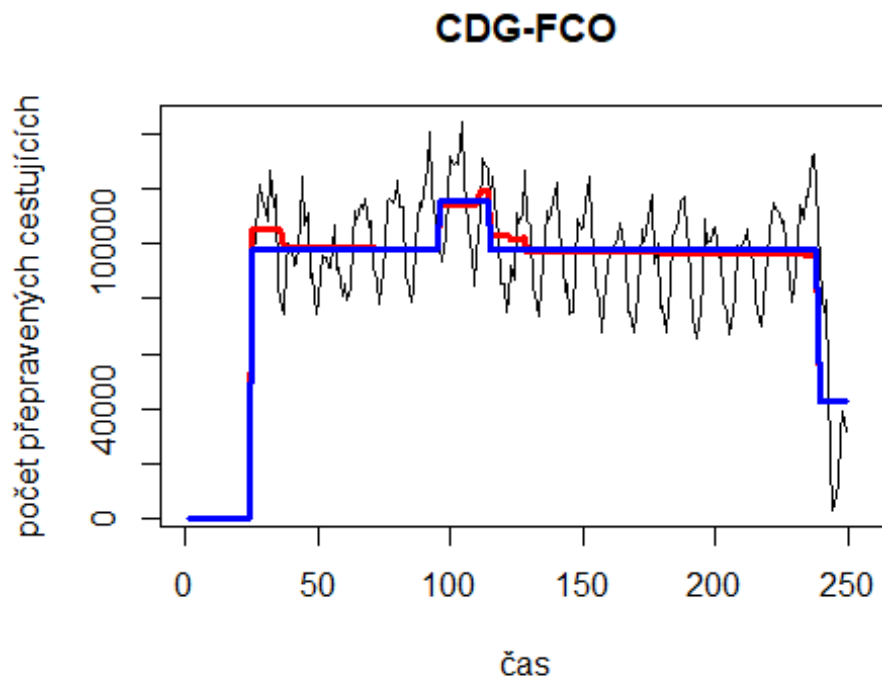
lm_CDG_FC03 <- lm(data$CDG_FC0_30~data$X2008_FC+data$X2019_CV)
summary(lm_CDG_FC03)

##
## Call:
## lm(formula = data$CDG_FC0_30 ~ data$X2008_FC + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -39984 -14139 1661 13422 49399
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 98281 1239 79.343 < 2e-16 ***
## data$X2008_FC 17207 4157 4.139 4.95e-05 ***

```

```
## data$X2019_CV    -55426          5360 -10.340 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 17300 on 222 degrees of freedom
## (31 observations deleted due to missingness)
## Multiple R-squared:  0.3703, Adjusted R-squared:  0.3646
## F-statistic: 65.28 on 2 and 222 DF,  p-value: < 2.2e-16

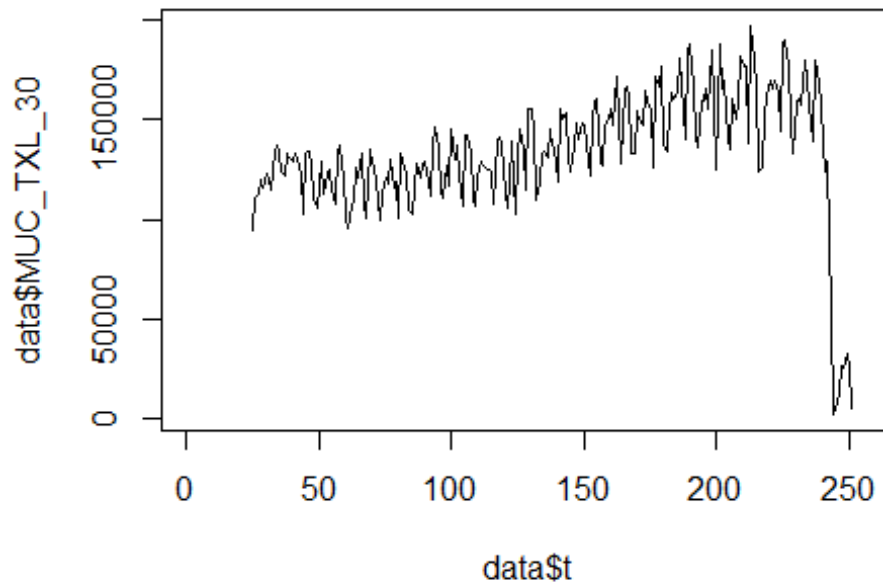
plot(data$CDG_FC0_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="CDG-FCO")
fit <- c(rep(0,24), lm_CDG_FC01$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CDG_FC02$fitted.values)
lines(fit2, col="blue", lwd=3)
```



7. Spojení Munich Airport -> Berlin Tegel Airport

```
data$MUC_TXL_30 <- data$MUC_TXL/data$days * 30
```

```
plot(data$MUC_TXL_30~data$t, t="l")
```



```
lm_MUC_TXL1 <- glm(data$MUC_TXL_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MUC_TXL1)
```

```
##
## Call:
## glm(formula = data$MUC_TXL_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -54180  -11626   1379   11544  103402
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   103291.26    3806.19  27.138  <2e-16 ***
## data$t         273.35      24.55  11.134  <2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER    8439.53    6560.97   1.286   0.1997
## data$X2008_FC   -4799.74    4979.15  -0.964   0.3361
## data$X2009_SF  -10173.76    5846.85  -1.740   0.0833 .
## data$X2010_ER    3277.87   10615.17   0.309   0.7578
## data$X2019_CV -113739.80    6275.53 -18.124  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 398651721)
```

```

##
## Null deviance: 2.3113e+11 on 226 degrees of freedom
## Residual deviance: 8.7703e+10 on 220 degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 5148.5
##
## Number of Fisher Scoring iterations: 2

lm_MUC_TXL2 <- glm(data$MUC_TXL_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_MUC_TXL2)

##
## Call:
## glm(formula = data$MUC_TXL_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -54190 -12730 1479 10773 103343
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 104741.29 3263.89 32.091 <2e-16 ***
## data$t 263.54 22.14 11.904 <2e-16 ***
## data$X2009_SF -10607.74 4927.84 -2.153 0.0324 *
## data$X2019_CV -112786.70 6238.24 -18.080 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 398952434)
##
## Null deviance: 2.3113e+11 on 226 degrees of freedom
## Residual deviance: 8.8966e+10 on 223 degrees of freedom
## (29 observations deleted due to missingness)
## AIC: 5145.8
##
## Number of Fisher Scoring iterations: 2

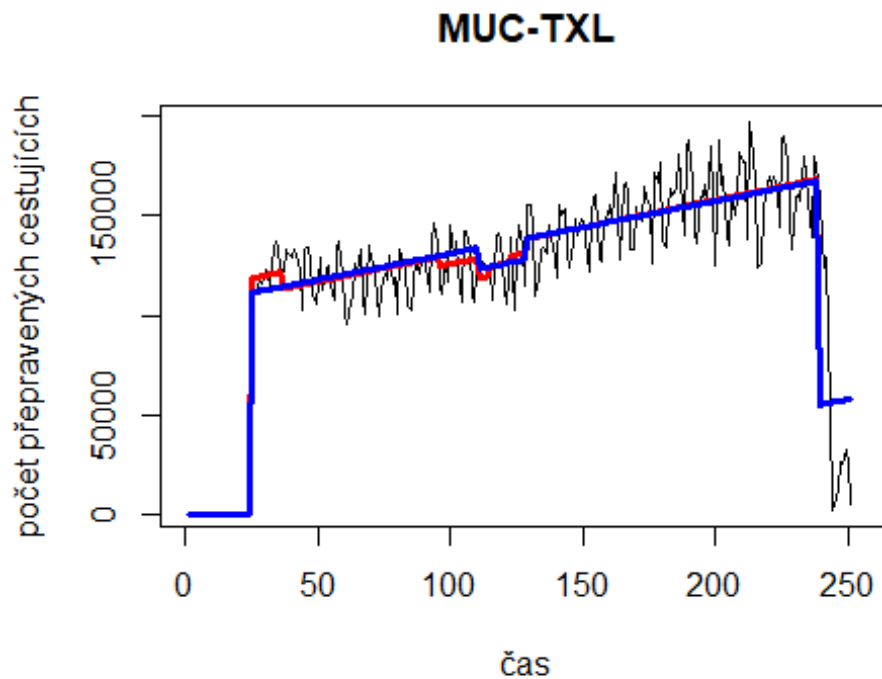
lm_MUC_TXL3 <- lm(data$MUC_TXL_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_MUC_TXL3)

##
## Call:
## lm(formula = data$MUC_TXL_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -54190 -12730 1479 10773 103343
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 104741.29 3263.89 32.091 <2e-16 ***

```

```
## data$t          263.54      22.14  11.904  <2e-16 ***
## data$X2009_SF  -10607.74   4927.84  -2.153  0.0324 *
## data$X2019_CV -112786.70  6238.24 -18.080  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 19970 on 223 degrees of freedom
## (29 observations deleted due to missingness)
## Multiple R-squared:  0.6151, Adjusted R-squared:  0.6099
## F-statistic: 118.8 on 3 and 223 DF,  p-value: < 2.2e-16

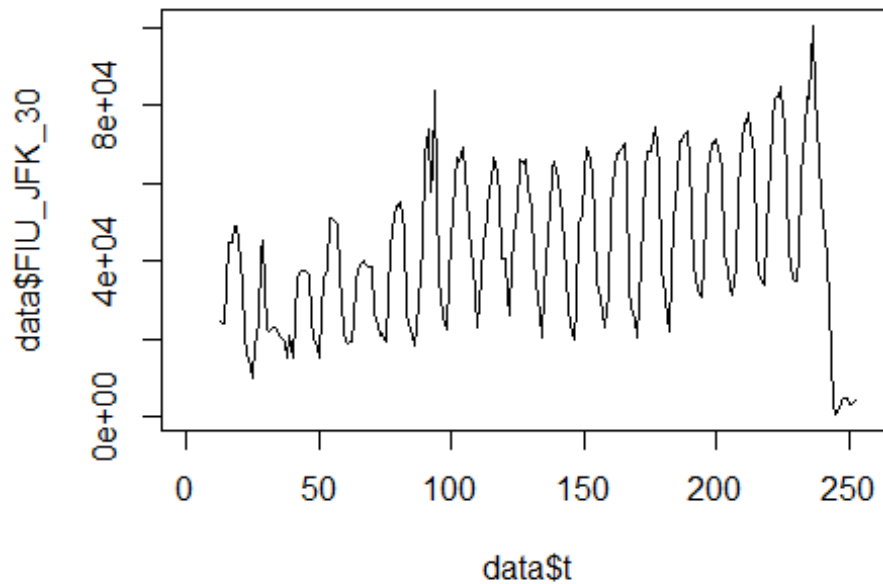
plot(data$MUC_TXL_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="MUC-TXL")
fit <- c(rep(0,24), lm_MUC_TXL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_MUC_TXL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



7. Spojeni 8.

Evropa - USA Roma Fiumicino Airport -> JFK Airport

```
data$FIU_JFK_30 <- data$FIU_JFK/data$days * 30
plot(data$FIU_JFK_30~data$t, t="l")
```



```
lm_FIU_JFK1 <- glm(data$FIU_JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2008_FC+data$X2010_ER+data$X2019_CV)
summary(lm_FIU_JFK1)

##
## Call:
## glm(formula = data$FIU_JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -31970  -14773    805    14028   43317
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    26071.72    3188.46   8.177 1.90e-14 ***
## data$t         151.67      20.55   7.381 2.79e-12 ***
## data$X2001_FC   6855.84    5438.77   1.261  0.209
## data$X2001_TER -7540.26    4742.63  -1.590  0.113
## data$X2003_SARS -8335.29    6246.57  -1.334  0.183
## data$X2008_FC  3395.62    4045.44   0.839  0.402
## data$X2010_ER  9966.00    7463.08   1.335  0.183
## data$X2019_CV -46179.64    5028.15 -9.184 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 270092445)
```

```

##
## Null deviance: 9.9958e+10 on 239 degrees of freedom
## Residual deviance: 6.2661e+10 on 232 degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 5350.4
##
## Number of Fisher Scoring iterations: 2

lm_FIU_JFK2 <- glm(data$FIU_JFK_30~data$t+data$X2001_TER+data$X2019_CV)
summary(lm_FIU_JFK2)

##
## Call:
## glm(formula = data$FIU_JFK_30 ~ data$t + data$X2001_TER + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -32280 -14866 493 14989 42546
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 27334.63 2705.98 10.102 < 2e-16 ***
## data$t 146.44 18.47 7.929 8.76e-14 ***
## data$X2001_TER -7981.99 4697.99 -1.699 0.0906 .
## data$X2019_CV -46157.91 5011.57 -9.210 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 272882200)
##
## Null deviance: 9.9958e+10 on 239 degrees of freedom
## Residual deviance: 6.4400e+10 on 236 degrees of freedom
## (16 observations deleted due to missingness)
## AIC: 5348.9
##
## Number of Fisher Scoring iterations: 2

lm_FIU_JFK3 <- lm(data$FIU_JFK_30~data$t+data$X2001_TER+data$X2019_CV)
summary(lm_FIU_JFK3)

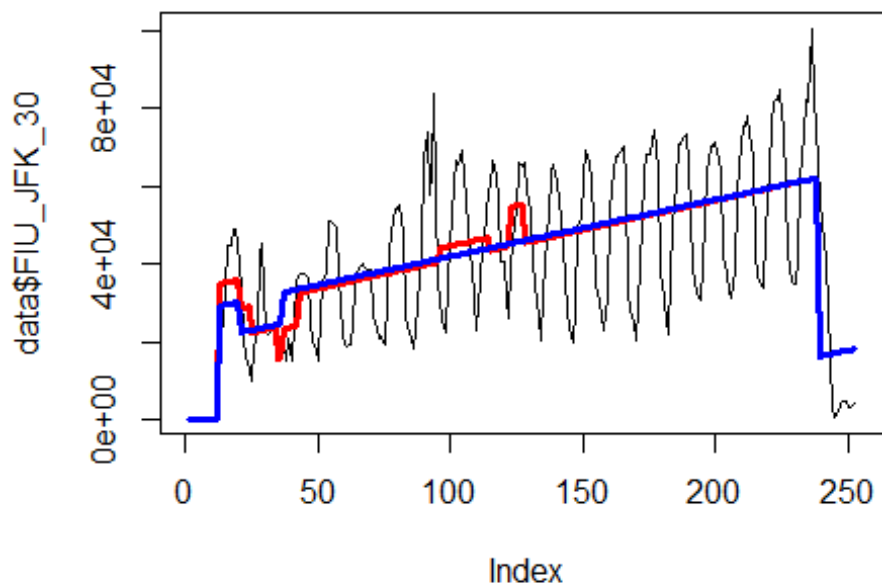
##
## Call:
## lm(formula = data$FIU_JFK_30 ~ data$t + data$X2001_TER + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -32280 -14866 493 14989 42546
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 27334.63 2705.98 10.102 < 2e-16 ***

```



```
## data$t          146.44      18.47   7.929 8.76e-14 ***
## data$X2001_TER -7981.99   4697.99  -1.699  0.0906 .
## data$X2019_CV  -46157.91  5011.57  -9.210 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 16520 on 236 degrees of freedom
## (16 observations deleted due to missingness)
## Multiple R-squared:  0.3557, Adjusted R-squared:  0.3475
## F-statistic: 43.44 on 3 and 236 DF,  p-value: < 2.2e-16

plot(data$FIU_JFK_30, type="l")
fit <- c(rep(0,12), lm_FIU_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_FIU_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

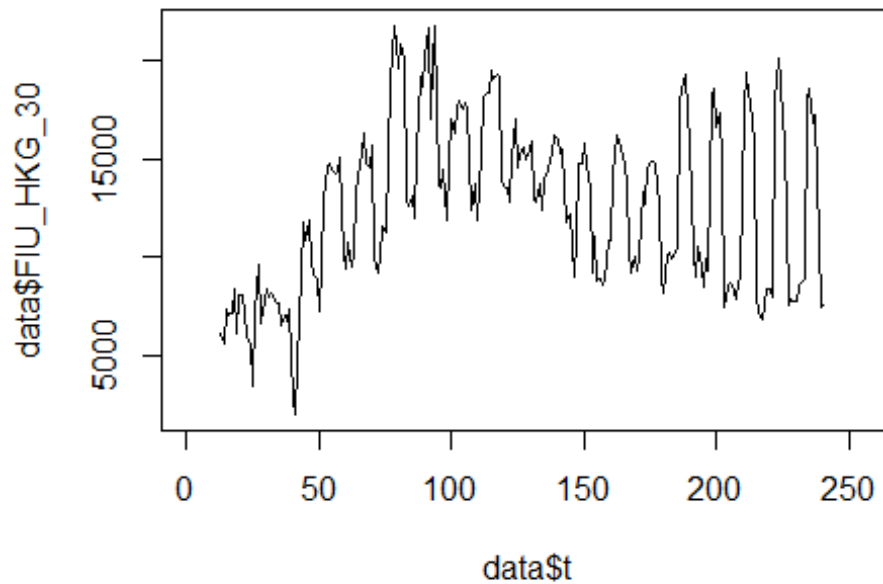


7. Spojeni 8.

Evropa - Čína + HKG Roma Fiumicino Airport -> HKG Airport

```
data$FIU_HKG_30 <- data$FIU_HKG/data$days * 30

plot(data$FIU_HKG_30~data$t, t="l")
```



```
lm_FIU_HKG1 <- glm(data$FIU_HKG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_FIU_HKG1)
```

```
##
## Call:
## glm(formula = data$FIU_HKG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -6318.9  -2781.4   -275.7   2466.0   8417.8
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  13992.894    765.385  18.282 < 2e-16 ***
## data$t        -7.122      4.807   -1.482  0.13990
## data$X2001_FC -5507.123   1197.166  -4.600  7.19e-06 ***
## data$X2001_TER -4302.654   1042.705  -4.126  5.26e-05 ***
## data$X2003_SARS -7029.229   1365.689  -5.147  5.94e-07 ***
## data$X2005_FLU  -734.072   1133.970  -0.647  0.51809
## data$X2008_FC  1804.452    897.282   2.011  0.04557 *
## data$X2009_SF  2870.755   1044.424   2.749  0.00649 **
## data$X2010_ER  -502.740   1885.432  -0.267  0.79000
## data$X2012_MERS 2170.254   1305.145   1.663  0.09779 .
```

```

## data$X2013_FLU      318.746   1163.988   0.274   0.78447
## data$X2019_CV     -4764.109   2564.600  -1.858   0.06458 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 12571617)
##
## Null deviance: 4149900928 on 227 degrees of freedom
## Residual deviance: 2715469229 on 216 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4387.8
##
## Number of Fisher Scoring iterations: 2

lm_FIU_HKG2 <- glm(data$FIU_HKG_30~data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_FIU_HKG2)

##
## Call:
## glm(formula = data$FIU_HKG_30 ~ data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -6152.2  -2946.8  -177.5   2482.7   8705.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    13036.7     272.8   47.791 < 2e-16 ***
## data$X2001_FC  -4856.5    1089.4   -4.458 1.32e-05 ***
## data$X2001_TER -3781.0     960.3   -3.937 0.000111 ***
## data$X2003_SARS -6477.6    1293.5   -5.008 1.13e-06 ***
## data$X2008_FC   2030.7     862.2    2.355 0.019387 *
## data$X2009_SF   2786.0     883.4    3.154 0.001836 **
## data$X2019_CV  -5513.5    2518.8   -2.189 0.029648 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 12539854)
##
## Null deviance: 4149900928 on 227 degrees of freedom
## Residual deviance: 2771307842 on 221 degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4382.5
##
## Number of Fisher Scoring iterations: 2

lm_FIU_HKG3 <- lm(data$FIU_HKG_30~data$X2001_FC+data$X2001_TER+data$X2003_SARS+data$X2008_FC+data$X2009_SF+data$X2019_CV)
summary(lm_FIU_HKG3)

```

```

##
## Call:
## lm(formula = data$FIU_HKG_30 ~ data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -6152.2 -2946.8  -177.5   2482.7  8705.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    13036.7     272.8   47.791 < 2e-16 ***
## data$X2001_FC  -4856.5     1089.4   -4.458 1.32e-05 ***
## data$X2001_TER -3781.0       960.3   -3.937 0.000111 ***
## data$X2003_SARS -6477.6     1293.5   -5.008 1.13e-06 ***
## data$X2008_FC   2030.7       862.2    2.355 0.019387 *
## data$X2009_SF   2786.0       883.4    3.154 0.001836 **
## data$X2019_CV  -5513.5     2518.8   -2.189 0.029648 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3541 on 221 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.3322, Adjusted R-squared:  0.3141
## F-statistic: 18.32 on 6 and 221 DF,  p-value: < 2.2e-16

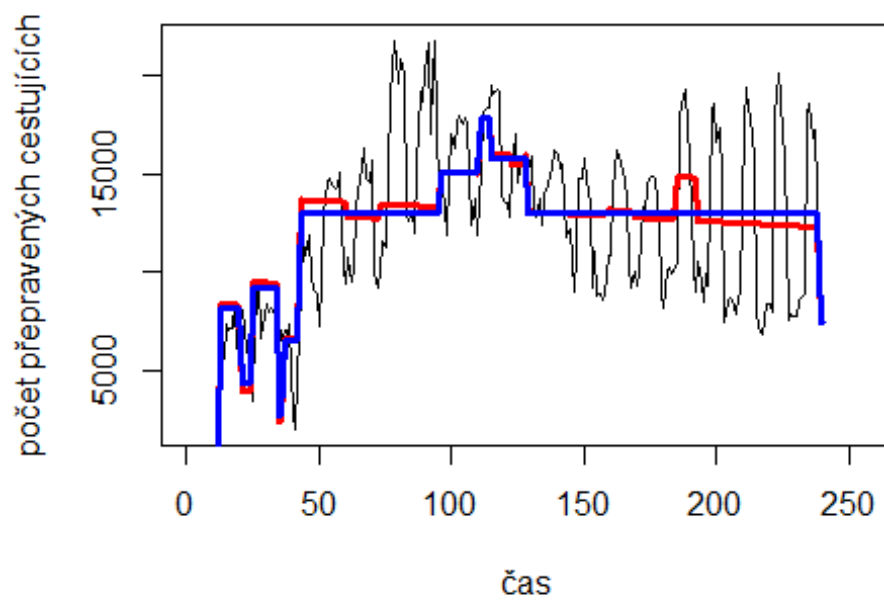
```

```

plot(data$FIU_HKG_30, type="l", xlab="čas", ylab="počet přepravených cestujících
h", main="FCO-HKG")
fit <- c(rep(0,12), lm_FIU_HKG1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_FIU_HKG2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

FCO-HKG

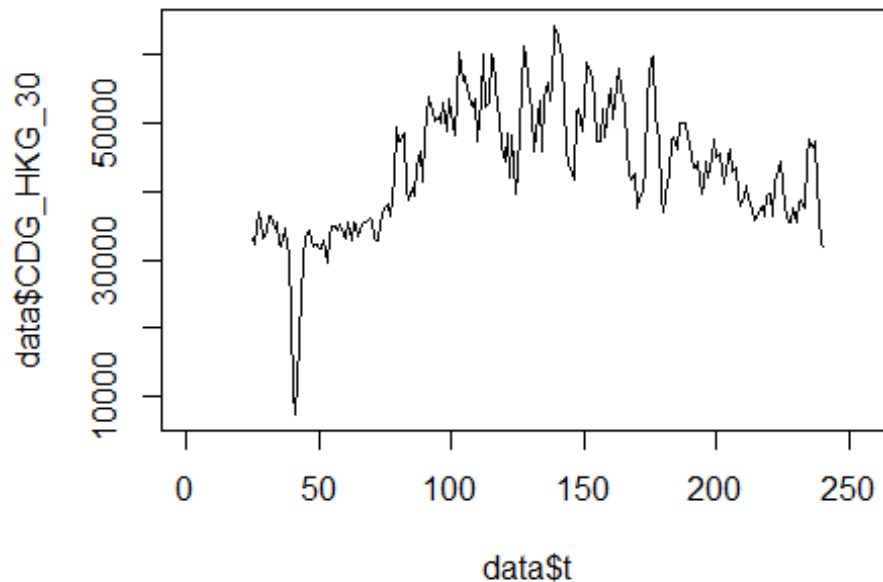


Spojeni 2. Evropa

- Čína + HKG CDG -> Hong Kong

```
data$CDG_HKG_30 <- data$CDG_HKG/data$days * 30
```

```
plot(data$CDG_HKG_30~data$t, t="l")
```



```
lm_CDG_HKG1 <- glm(data$CDG_HKG_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_CDG_HKG1)
```

```
##
## Call:
## glm(formula = data$CDG_HKG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -17541.5  -5234.6   -558.5   3691.6   20927.2
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  39843.892   1578.738   25.238 < 2e-16 ***
## data$t       23.457     9.857    2.380  0.01824 *
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER  -3612.787   2387.147   -1.513  0.13171
## data$X2003_SARS -15750.581   2733.764   -5.761 3.02e-08 ***
## data$X2005_FLU  -6738.211   2282.402   -2.952  0.00352 **
## data$X2008_FC   9360.797   1801.394    5.196 4.89e-07 ***
## data$X2009_SF   6963.567   2092.474    3.328  0.00104 **
## data$X2010_ER  -1658.910   3774.213   -0.440  0.66073
## data$X2012_MERS  2838.891   2612.645    1.087  0.27849
```

```

## data$X2013_FLU      7273.858    2330.194    3.122    0.00206 **
## data$X2019_CV     -13382.407    5135.324    -2.606    0.00983 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 50373428)
##
##      Null deviance: 1.8294e+10  on 215  degrees of freedom
## Residual deviance: 1.0327e+10  on 205  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4456.4
##
## Number of Fisher Scoring iterations: 2

lm_CDG_HKG2 <- glm(data$CDG_HKG_30~data$t+data$X2003_SARS+data$X2005_FLU+data
$X2008_FC+data$X2009_SF+data$X2013_FLU+data$X2019_CV)
summary(lm_CDG_HKG2)

##
## Call:
## glm(formula = data$CDG_HKG_30 ~ data$t + data$X2003_SARS + data$X2005_FLU
+
##      data$X2008_FC + data$X2009_SF + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -16658.2   -5441.6   -618.3    4111.3   21057.9
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   38608.630   1385.374   27.869 < 2e-16 ***
## data$t         31.404     8.806    3.566 0.000450 ***
## data$X2003_SARS -15724.456   2737.550   -5.744 3.25e-08 ***
## data$X2005_FLU  -6031.391   2235.007   -2.699 0.007535 **
## data$X2008_FC   9820.035   1763.314    5.569 7.86e-08 ***
## data$X2009_SF   6686.361   1784.158    3.748 0.000231 ***
## data$X2013_FLU  7209.867   2326.579    3.099 0.002211 **
## data$X2019_CV -14050.331   5129.170   -2.739 0.006692 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 50520605)
##
##      Null deviance: 1.8294e+10  on 215  degrees of freedom
## Residual deviance: 1.0508e+10  on 208  degrees of freedom
## (40 observations deleted due to missingness)
## AIC: 4454.2
##
## Number of Fisher Scoring iterations: 2

```

```

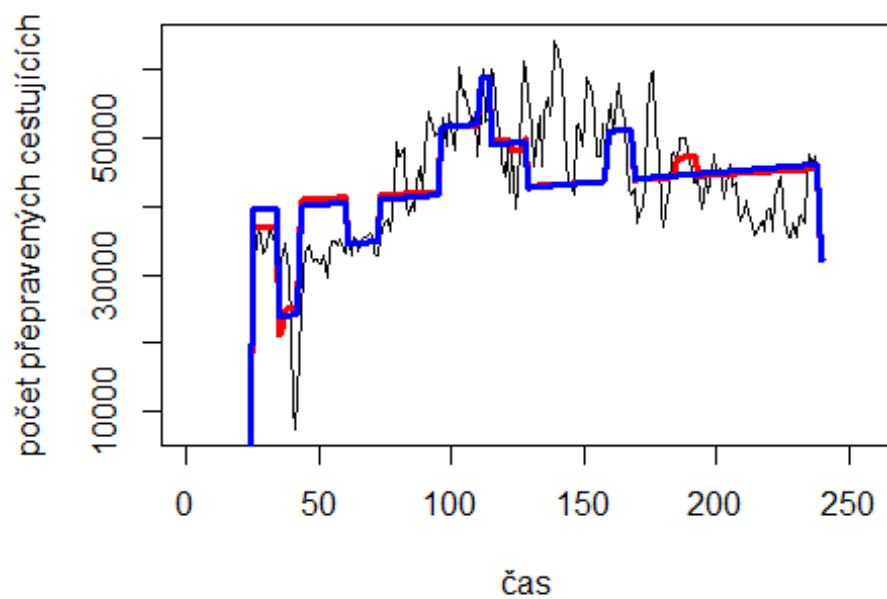
lm_CDG_HKG3 <- lm(data$CDG_HKG_30~data$t+data$X2003_SARS+data$X2005_FLU+data$
X2008_FC+data$X2009_SF+data$X2013_FLU+data$X2019_CV)
summary(lm_CDG_HKG3)

##
## Call:
## lm(formula = data$CDG_HKG_30 ~ data$t + data$X2003_SARS + data$X2005_FLU +
##     data$X2008_FC + data$X2009_SF + data$X2013_FLU + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -16658.2  -5441.6   -618.3   4111.3  21057.9
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   38608.630   1385.374   27.869 < 2e-16 ***
## data$t         31.404     8.806    3.566 0.000450 ***
## data$X2003_SARS -15724.456   2737.550   -5.744 3.25e-08 ***
## data$X2005_FLU  -6031.391   2235.007   -2.699 0.007535 **
## data$X2008_FC   9820.035   1763.314    5.569 7.86e-08 ***
## data$X2009_SF   6686.361   1784.158    3.748 0.000231 ***
## data$X2013_FLU  7209.867   2326.579    3.099 0.002211 **
## data$X2019_CV -14050.331   5129.170   -2.739 0.006692 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7108 on 208 degrees of freedom
## (40 observations deleted due to missingness)
## Multiple R-squared:  0.4256, Adjusted R-squared:  0.4062
## F-statistic: 22.01 on 7 and 208 DF,  p-value: < 2.2e-16

plot(data$CDG_HKG_30, type="l",xlab="čas",ylab="počet přepravených cestujících
h",main="CDG-HKG")
fit <- c(rep(0,24), lm_CDG_HKG1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CDG_HKG2$fitted.values)
lines(fit2, col="blue", lwd=3)

```


CDG-HKG

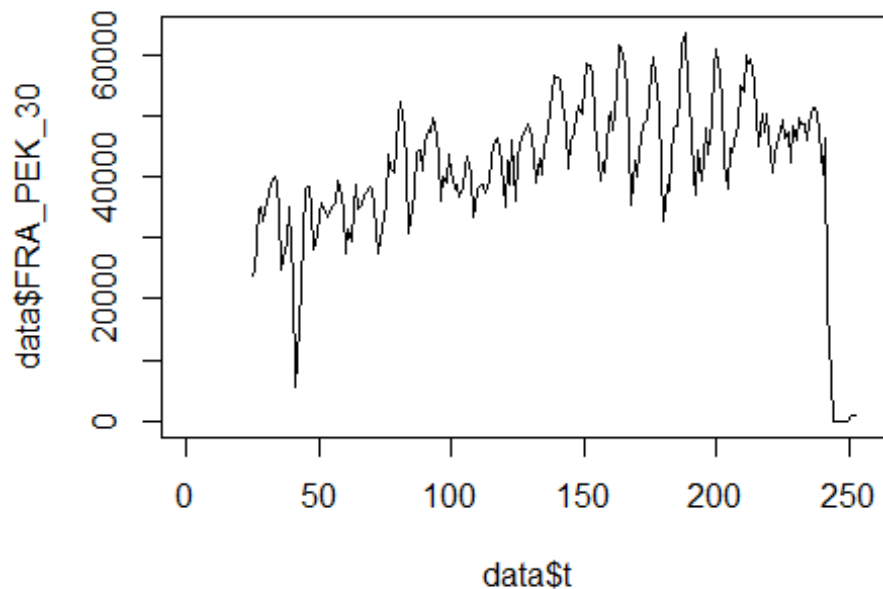


Spojeni 3. Evropa

- Čína + HKG Frankfurt -> Peking

```
data$FRA_PEK_30 <- data$FRA_PEK/data$days * 30
```

```
plot(data$FRA_PEK_30~data$t, t="l")
```



```
lm_FRA_PEK1 <- glm(data$FRA_PEK_30~data$t+data$X2001_FC+data$X2001_TER+data$X
2003_SARS+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012
_MERS+data$X2013_FLU+data$X2019_CV)
summary(lm_FRA_PEK1)
```

```
##
## Call:
## glm(formula = data$FRA_PEK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##      data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -18464   -4191        36    3820   35216
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   34167.27   1698.93  20.111 < 2e-16 ***
## data$t         73.35     10.61   6.915 5.16e-11 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER   -841.04    2569.26  -0.327  0.7437
## data$X2003_SARS -13027.44   2942.38  -4.428 1.51e-05 ***
## data$X2005_FLU  -4242.34   2456.55  -1.727  0.0856 .
## data$X2008_FC   -3002.14   1938.88  -1.548  0.1230
## data$X2009_SF   -389.88    2252.19  -0.173  0.8627
## data$X2010_ER    547.63    4062.30   0.135  0.8929
## data$X2012_MERS  3517.89    2812.06   1.251  0.2123
```

```

## data$X2013_FLU      5592.73    2508.06    2.230    0.0268 *
## data$X2019_CV     -40872.74    2380.83   -17.167   < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 58357035)
##
##      Null deviance: 3.5296e+10  on 227  degrees of freedom
## Residual deviance: 1.2663e+10  on 217  degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4736.9
##
## Number of Fisher Scoring iterations: 2

lm_FRA_PEK2 <- glm(data$FRA_PEK_30~data$t+data$X2003_SARS+data$X2013_FLU+data
$X2019_CV)
summary(lm_FRA_PEK2)

##
## Call:
## glm(formula = data$FRA_PEK_30 ~ data$t + data$X2003_SARS + data$X2013_FLU
+
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -18280   -4522    -642    4112   35262
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   32324.490   1310.646   24.663 < 2e-16 ***
## data$t         83.602     8.913    9.380 < 2e-16 ***
## data$X2003_SARS -11789.784   2886.509   -4.084 6.16e-05 ***
## data$X2013_FLU  5758.635   2494.082    2.309  0.0219 *
## data$X2019_CV -41547.833   2339.134  -17.762 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 58511956)
##
##      Null deviance: 3.5296e+10  on 227  degrees of freedom
## Residual deviance: 1.3048e+10  on 223  degrees of freedom
## (28 observations deleted due to missingness)
## AIC: 4731.7
##
## Number of Fisher Scoring iterations: 2

lm_FRA_PEK3 <- lm(data$FRA_PEK_30~data$t+data$X2003_SARS+data$X2013_FLU+data$
X2019_CV)
summary(lm_FRA_PEK3)

```

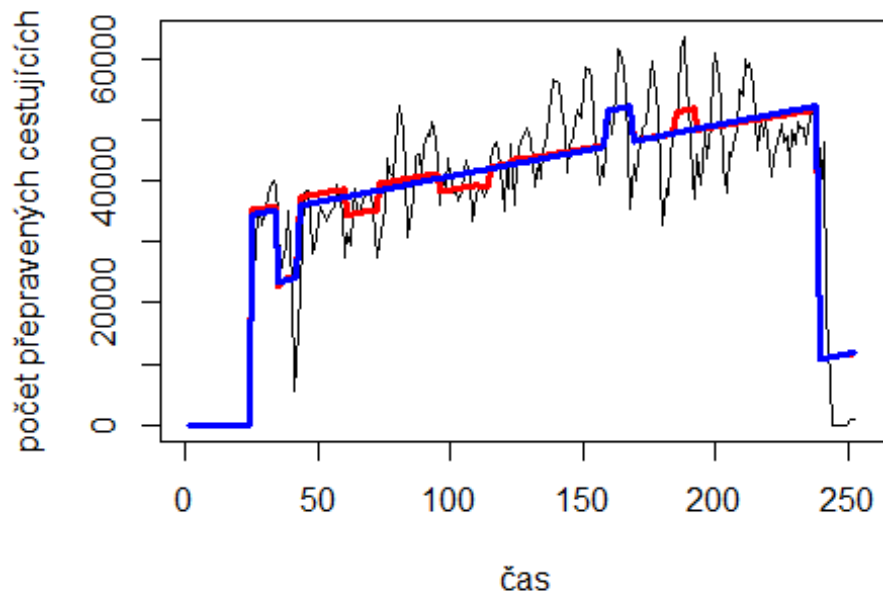
```

##
## Call:
## lm(formula = data$FRA_PEK_30 ~ data$t + data$X2003_SARS + data$X2013_FLU +
##     data$X2019_CV)
##
## Residuals:
##   Min       1Q   Median       3Q      Max
## -18280  -4522   -642    4112   35262
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   32324.490   1310.646   24.663 < 2e-16 ***
## data$t         83.602      8.913    9.380 < 2e-16 ***
## data$X2003_SARS -11789.784   2886.509   -4.084 6.16e-05 ***
## data$X2013_FLU  5758.635   2494.082    2.309 0.0219 *
## data$X2019_CV -41547.833   2339.134  -17.762 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7649 on 223 degrees of freedom
## (28 observations deleted due to missingness)
## Multiple R-squared:  0.6303, Adjusted R-squared:  0.6237
## F-statistic: 95.06 on 4 and 223 DF,  p-value: < 2.2e-16

plot(data$FRA_PEK_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="FRA-PEK")
fit <- c(rep(0,24), lm_FRA_PEK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_FRA_PEK2$fitted.values)
lines(fit2, col="blue", lwd=3)

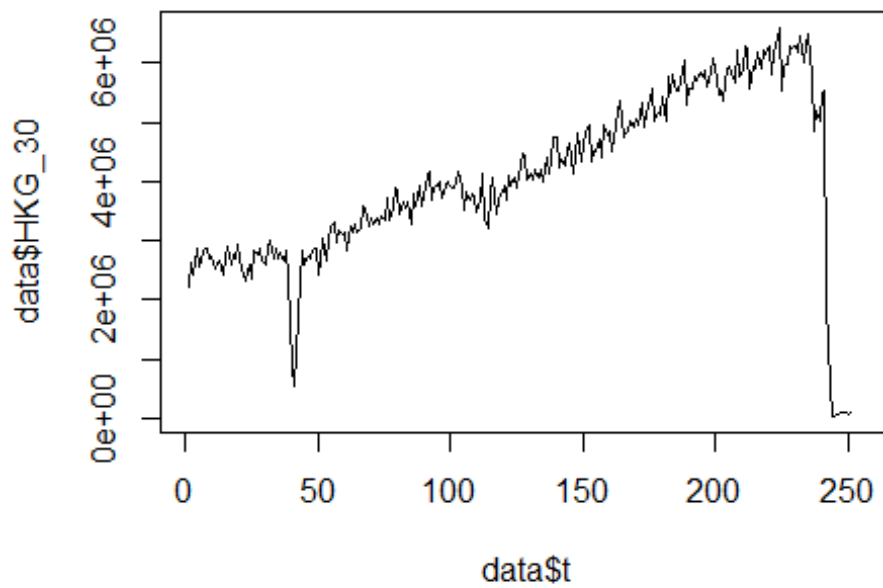
```

FRA-PEK



Letiště Hong Kong

```
data$HKG_30 <- data$HKG/data$days * 30  
plot(data$HKG_30~data$t, t="l")
```



```
lm_HKG1 <- glm(data$HKG_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR
S+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012_MERS+da
ta$X2013_FLU+data$X2019_CV)
summary(lm_HKG1)
```

```
##
## Call:
## glm(formula = data$HKG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##     data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1495301  -185578    7015   204499  4135265
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2053736    130434  15.745 < 2e-16 ***
## data$t          17767         820  21.667 < 2e-16 ***
## data$X2001_FC   334504    167692   1.995  0.04721 *
## data$X2001_TER  132126    173805   0.760  0.44789
## data$X2003_SARS -781610    234913  -3.327  0.00102 **
## data$X2005_FLU   35504    194767   0.182  0.85551
## data$X2008_FC  -60086    154237  -0.390  0.69720
## data$X2009_SF  -324410    179631  -1.806  0.07218 .
## data$X2010_ER   144596    324342   0.446  0.65614
## data$X2012_MERS 226529    224509   1.009  0.31400
## data$X2013_FLU  -46496    200235  -0.232  0.81658
## data$X2019_CV  -4937005    194669 -25.361 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 372031425910)
##
## Null deviance: 5.2806e+14 on 250 degrees of freedom
## Residual deviance: 8.8916e+13 on 239 degrees of freedom
## (5 observations deleted due to missingness)
## AIC: 7413.2
##
## Number of Fisher Scoring iterations: 2
```

```
lm_HKG2 <- glm(data$HKG_30~data$t+data$X2001_FC+data$X2003_SARS+data$X2009_SF
+data$X2019_CV)
summary(lm_HKG2)
```

```
##
## Call:
## glm(formula = data$HKG_30 ~ data$t + data$X2001_FC + data$X2003_SARS +
##     data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
```

```

##      Min      1Q   Median      3Q      Max
## -1495316 -199781   10101   202264  4134931
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2074506    105690  19.628 < 2e-16 ***
## data$t         17701         703  25.180 < 2e-16 ***
## data$X2001_FC  336588    157557  2.136 0.033647 *
## data$X2003_SARS -766784    229123 -3.347 0.000947 ***
## data$X2009_SF  -310404    149818 -2.072 0.039324 *
## data$X2019_CV -4941448    189564 -26.067 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 366338939196)
##
## Null deviance: 5.2806e+14 on 250 degrees of freedom
## Residual deviance: 8.9753e+13 on 245 degrees of freedom
## (5 observations deleted due to missingness)
## AIC: 7403.6
##
## Number of Fisher Scoring iterations: 2

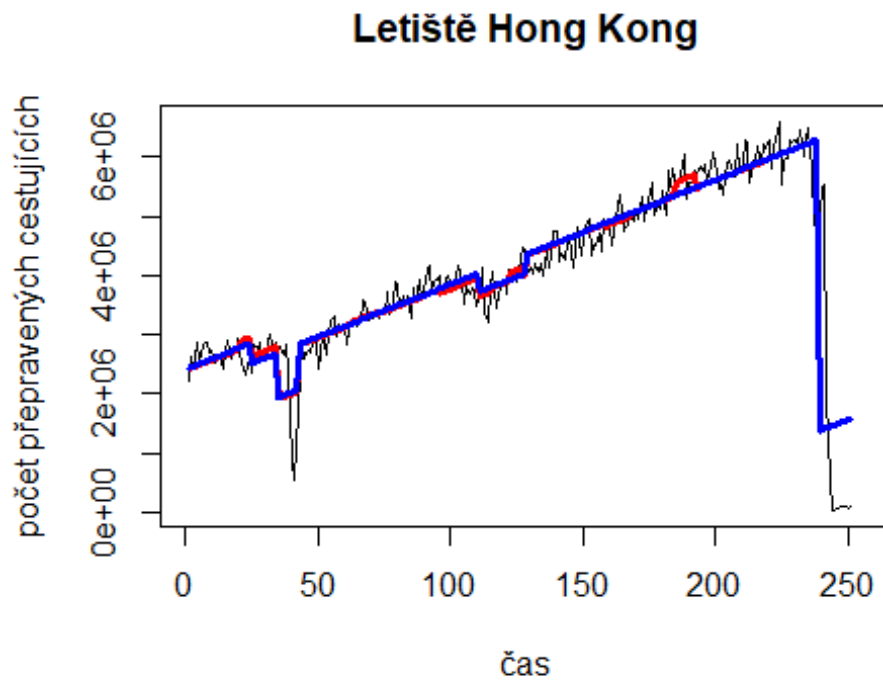
lm_HKG3 <- lm(data$HKG_30~data$t+data$X2001_FC+data$X2003_SARS+data$X2009_SF+
data$X2019_CV)
summary(lm_HKG3)

##
## Call:
## lm(formula = data$HKG_30 ~ data$t + data$X2001_FC + data$X2003_SARS +
## data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min      1Q   Median      3Q      Max
## -1495316 -199781   10101   202264  4134931
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2074506    105690  19.628 < 2e-16 ***
## data$t         17701         703  25.180 < 2e-16 ***
## data$X2001_FC  336588    157557  2.136 0.033647 *
## data$X2003_SARS -766784    229123 -3.347 0.000947 ***
## data$X2009_SF  -310404    149818 -2.072 0.039324 *
## data$X2019_CV -4941448    189564 -26.067 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 605300 on 245 degrees of freedom
## (5 observations deleted due to missingness)

```

```
## Multiple R-squared:  0.83, Adjusted R-squared:  0.8266
## F-statistic: 239.3 on 5 and 245 DF,  p-value: < 2.2e-16

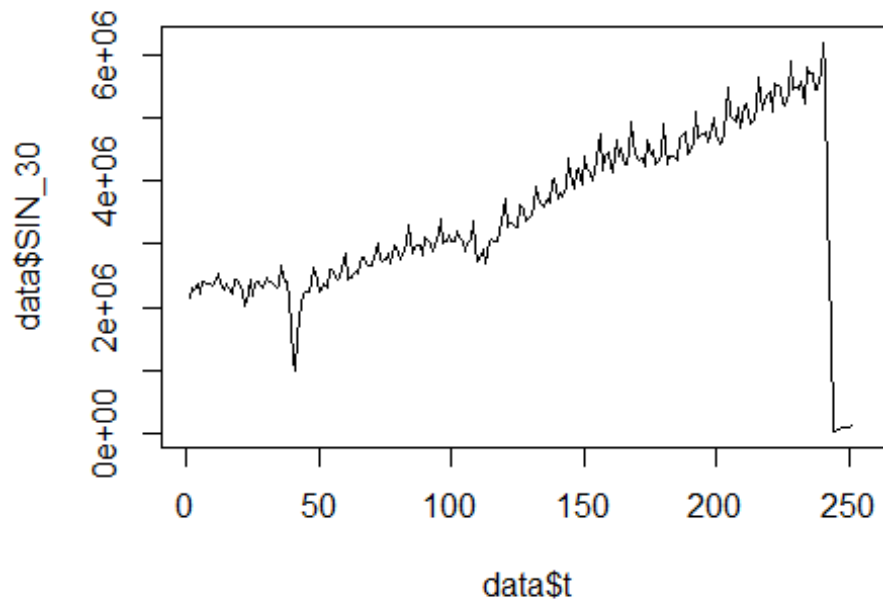
plot(data$HKG_30, type="l", xlab="čas", ylab ="počet přepravených cestujících"
,main = "Letiště Hong Kong")
fit <- c(rep(0,0), lm_HKG1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_HKG2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Letiště Singapore

```
data$SIN_30 <- data$SIN/data$days * 30

plot(data$SIN_30~data$t, t="l")
```

```
lm_SIN1 <- glm(data$SIN_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR
S+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012_MERS+da
ta$X2013_FLU+data$X2019_CV)
summary(lm_SIN1)
```

```
##
## Call:
## glm(formula = data$SIN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +
##     data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1789256  -138630   -17519   131065   4490303
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1583778.0   132516.2   11.952 < 2e-16 ***
## data$t       16610.9     833.1    19.938 < 2e-16 ***
## data$X2001_FC  503269.7   170369.6    2.954  0.00345 **
## data$X2001_TER 195766.1   176580.5    1.109  0.26870
## data$X2003_SARS -319555.8   238663.8   -1.339  0.18186
## data$X2005_FLU -23981.2   197876.8   -0.121  0.90364
## data$X2008_FC -226537.6   156699.8   -1.446  0.14958
## data$X2009_SF -316696.3   182499.4   -1.735  0.08397 .
## data$X2010_ER  71963.5    329520.7    0.218  0.82731
## data$X2012_MERS -64981.6   228093.9   -0.285  0.77598
```

```

## data$X2013_FLU      139475.7   203432.1   0.686   0.49362
## data$X2019_CV      -3853118.7   197777.5  -19.482 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 384007303695)
##
##      Null deviance: 4.1036e+14  on 250  degrees of freedom
## Residual deviance: 9.1778e+13  on 239  degrees of freedom
## (5 observations deleted due to missingness)
## AIC: 7421.2
##
## Number of Fisher Scoring iterations: 2

lm_SIN2 <- glm(data$SIN_30~data$t+data$X2001_FC+data$X2009_SF+data$X2019_CV)
summary(lm_SIN2)

##
## Call:
## glm(formula = data$SIN_30 ~ data$t + data$X2001_FC + data$X2009_SF +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1790364   -136228   -31103    140527    4491226
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1543896.1   100995.5   15.287 < 2e-16 ***
## data$t       16795.5     684.9   24.521 < 2e-16 ***
## data$X2001_FC  573471.4   157011.8    3.652 0.000317 ***
## data$X2009_SF -329230.1   152570.4   -2.158 0.031905 *
## data$X2019_CV -3858472.4   193120.3  -19.980 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 382428492223)
##
##      Null deviance: 4.1036e+14  on 250  degrees of freedom
## Residual deviance: 9.4077e+13  on 246  degrees of freedom
## (5 observations deleted due to missingness)
## AIC: 7413.4
##
## Number of Fisher Scoring iterations: 2

lm_SIN3 <- lm(data$SIN_30~data$t+data$X2001_FC+data$X2009_SF+data$X2019_CV)
summary(lm_SIN3)

##
## Call:
## lm(formula = data$SIN_30 ~ data$t + data$X2001_FC + data$X2009_SF +

```

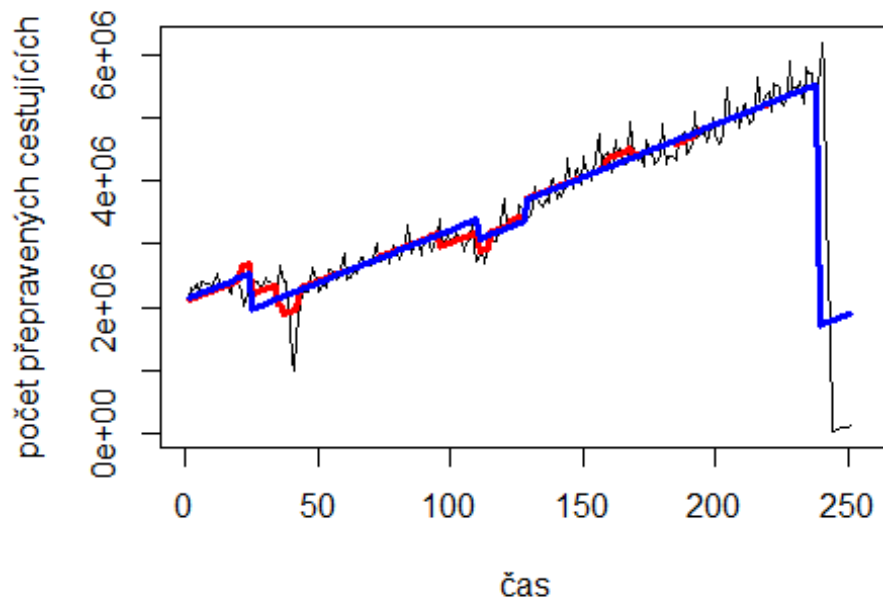
```

##      data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1790364 -136228  -31103   140527  4491226
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1543896.1   100995.5   15.287 < 2e-16 ***
## data$t        16795.5     684.9    24.521 < 2e-16 ***
## data$X2001_FC  573471.4   157011.8    3.652 0.000317 ***
## data$X2009_SF -329230.1   152570.4   -2.158 0.031905 *
## data$X2019_CV -3858472.4   193120.3  -19.980 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 618400 on 246 degrees of freedom
## (5 observations deleted due to missingness)
## Multiple R-squared:  0.7707, Adjusted R-squared:  0.767
## F-statistic: 206.8 on 4 and 246 DF,  p-value: < 2.2e-16

plot(data$SIN_30, type="l", xlab="čas", ylab ="počet přepravených cestujících"
, main = "Letiště Singapur")
fit <- c(rep(0,0), lm_SIN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_SIN2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

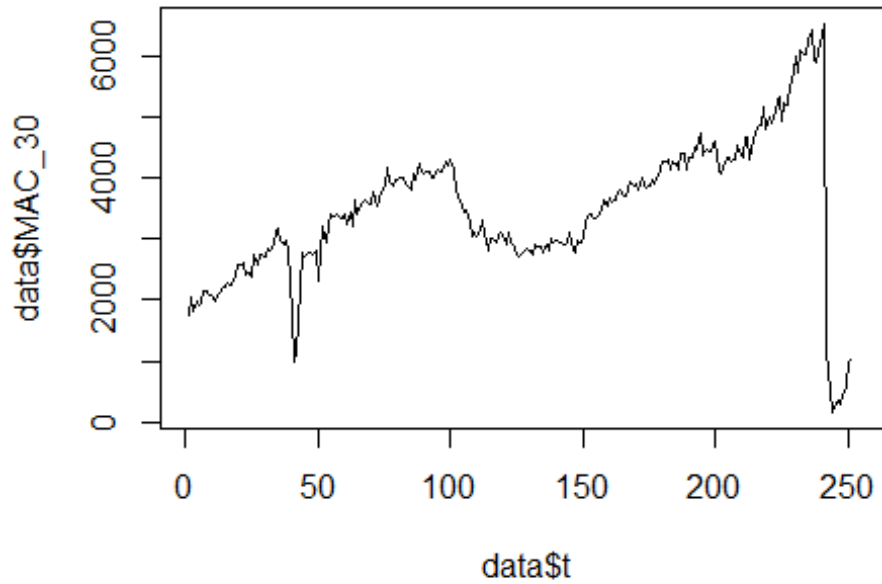
Letiště Singapur



Letiště MACAO

```
data$MAC_30 <- data$MAC/data$days * 30
```

```
plot(data$MAC_30~data$t, t="l")
```



```
lm_MAC1 <- glm(data$MAC_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR  
S+data$X2005_FLU+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2012_MERS+da  
ta$X2013_FLU+data$X2019_CV)  
summary(lm_MAC1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$MAC_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
## data$X2003_SARS + data$X2005_FLU + data$X2008_FC + data$X2009_SF +  
## data$X2010_ER + data$X2012_MERS + data$X2013_FLU + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -1739.3  -289.2   -25.7    273.8   4659.7
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)    2339.65    166.95  14.014 < 2e-16 ***  
## data$t         10.89      1.05  10.378 < 2e-16 ***  
## data$X2001_FC  -331.26    214.63  -1.543  0.12406  
## data$X2001_TER  222.00    222.46  0.998  0.31931  
## data$X2003_SARS -469.51    300.67  -1.562  0.11972  
## data$X2005_FLU  451.68    249.29  1.812  0.07126 .
```

```

## data$X2008_FC      234.11      197.41      1.186      0.23685
## data$X2009_SF     -663.61      229.92     -2.886      0.00425 **
## data$X2010_ER     -228.88      415.14     -0.551      0.58192
## data$X2012_MERS   -83.30      287.36     -0.290      0.77215
## data$X2013_FLU   -402.48      256.29     -1.570      0.11764
## data$X2019_CV    -3096.15      249.16    -12.426     < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 609472.5)
##
## Null deviance: 335199819 on 250 degrees of freedom
## Residual deviance: 145663932 on 239 degrees of freedom
## (5 observations deleted due to missingness)
## AIC: 4069.4
##
## Number of Fisher Scoring iterations: 2

lm_MAC2 <- glm(data$MAC_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_MAC2)

##
## Call:
## glm(formula = data$MAC_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1758.1   -393.3    -36.7    424.4   4660.6
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2295.2119   104.1054  22.047 < 2e-16 ***
## data$t       11.1158     0.7477  14.867 < 2e-16 ***
## data$X2009_SF -657.3760   194.2938  -3.383 0.000832 ***
## data$X2019_CV -3106.3486   244.8997 -12.684 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 628110.6)
##
## Null deviance: 335199819 on 250 degrees of freedom
## Residual deviance: 155143316 on 247 degrees of freedom
## (5 observations deleted due to missingness)
## AIC: 4069.2
##
## Number of Fisher Scoring iterations: 2

lm_MAC3 <- lm(data$MAC_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_MAC3)

```

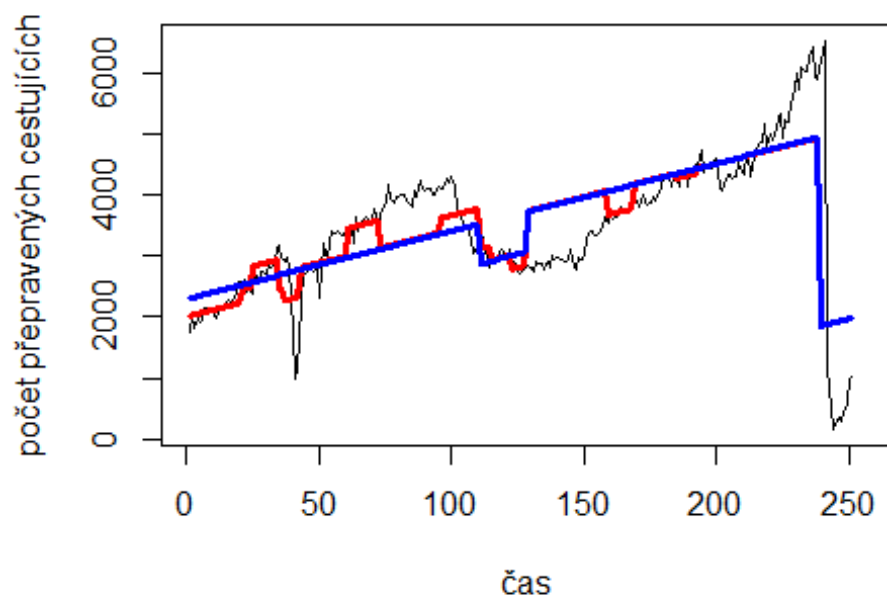
```

##
## Call:
## lm(formula = data$MAC_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1758.1  -393.3   -36.7   424.4  4660.6
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2295.2119   104.1054   22.047 < 2e-16 ***
## data$t        11.1158     0.7477   14.867 < 2e-16 ***
## data$X2009_SF -657.3760   194.2938   -3.383 0.000832 ***
## data$X2019_CV -3106.3486   244.8997  -12.684 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 792.5 on 247 degrees of freedom
## (5 observations deleted due to missingness)
## Multiple R-squared:  0.5372, Adjusted R-squared:  0.5315
## F-statistic: 95.55 on 3 and 247 DF,  p-value: < 2.2e-16

plot(data$MAC_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="Letiště Macao")
fit <- c(rep(0,0), lm_MAC1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_MAC2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

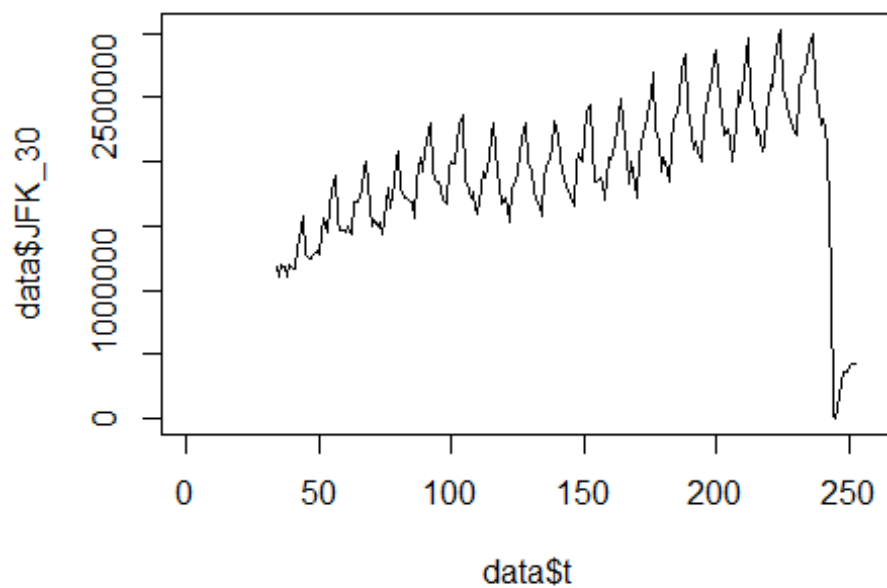
Letiště Macao



Letiště JFK

```
data$JFK_30 <- data$JFK/data$days * 30
```

```
plot(data$JFK_30~data$t, t="l")
```



```
lm_JFK1 <- glm(data$JFK_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR
S+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_JFK1)
```

```
##
## Call:
## glm(formula = data$JFK_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -887937 -187937  -14642   126227  1460276
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1239416.4    65923.1   18.801  <2e-16 ***
## data$t       5646.5        418.9   13.479  <2e-16 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER  -108283.1    206893.6   -0.523  0.6013
## data$X2003_SARS -248328.0    134063.8   -1.852  0.0654 .
## data$X2008_FC   62765.1     81525.3    0.770  0.4422
## data$X2009_SF  -18532.1     95390.4   -0.194  0.8461
## data$X2010_ER   46799.2    172930.4    0.271  0.7869
## data$X2019_CV -1728962.9    99767.0  -17.330  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 105790473149)
##
## Null deviance: 6.4088e+13  on 218  degrees of freedom
## Residual deviance: 2.2322e+13  on 211  degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6190.6
##
## Number of Fisher Scoring iterations: 2
```

```
lm_JFK2 <- glm(data$JFK_30~data$t+data$X2003_SARS+data$X2019_CV)
summary(lm_JFK2)
```

```
##
## Call:
## glm(formula = data$JFK_30 ~ data$t + data$X2003_SARS + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -887958 -194787  -12448   138386  1460050
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1250163     61040   20.481  <2e-16 ***
```



```

## data$t          5606          404  13.876  <2e-16 ***
## data$X2003_SARS -284564      123465  -2.305   0.0221 *
## data$X2019_CV  -1729627      98971  -17.476  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 104274918636)
##
## Null deviance: 6.4088e+13 on 218 degrees of freedom
## Residual deviance: 2.2419e+13 on 215 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6183.6
##
## Number of Fisher Scoring iterations: 2

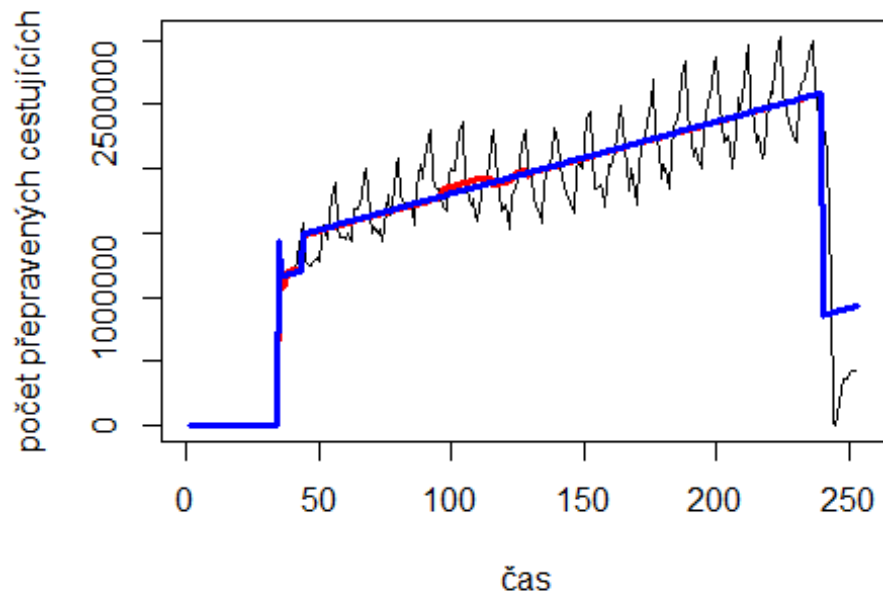
lm_JFK3 <- lm(data$JFK_30~data$t+data$X2003_SARS+data$X2019_CV)
summary(lm_JFK3)

##
## Call:
## lm(formula = data$JFK_30 ~ data$t + data$X2003_SARS + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -887958 -194787 -12448  138386 1460050
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1250163     61040  20.481  <2e-16 ***
## data$t         5606         404  13.876  <2e-16 ***
## data$X2003_SARS -284564     123465  -2.305   0.0221 *
## data$X2019_CV -1729627     98971  -17.476  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 322900 on 215 degrees of freedom
## (37 observations deleted due to missingness)
## Multiple R-squared:  0.6502, Adjusted R-squared:  0.6453
## F-statistic: 133.2 on 3 and 215 DF, p-value: < 2.2e-16

plot(data$JFK_30, type="l",xlab="čas", ylab ="počet přepravených cestujících"
,main = "Letiště John F. Kennedy ")
fit <- c(rep(0, 34), lm_JFK1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 34), lm_JFK2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

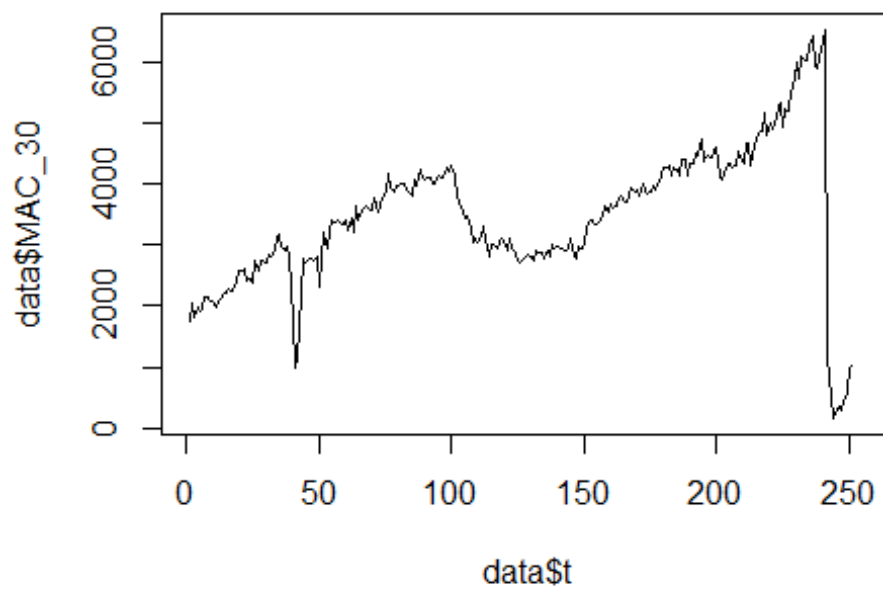
Letiště John F. Kennedy



Letiště MACAO

```
data$MAC_30 <- data$MAC/data$days * 30
```

```
plot(data$MAC_30~data$t, t="l")
```



```
lm_MAC1 <- glm(data$MAC_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR
S+data$X2008_FC+data$X2010_ER+data$X2012_MERS+data$X2019_CV)
summary(lm_MAC1)
```

```
##
## Call:
## glm(formula = data$MAC_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2010_ER + data$X2012_MERS +
##     data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1740.0   -414.7    -35.8    414.4   4657.3
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2398.895    154.311   15.546 <2e-16 ***
## data$t         10.276      1.007   10.204 <2e-16 ***
## data$X2001_FC  -378.421    210.836  -1.795  0.0739 .
## data$X2001_TER  195.743    223.976   0.874  0.3830
## data$X2003_SARS -498.437    303.928  -1.640  0.1023
## data$X2008_FC   99.925    196.832   0.508  0.6121
## data$X2010_ER  -874.624    363.224  -2.408  0.0168 *
## data$X2012_MERS -26.265    293.405  -0.090  0.9287
## data$X2019_CV -3004.261    253.175 -11.866 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 639342.8)
##
##      Null deviance: 335199819  on 250  degrees of freedom
## Residual deviance: 154720967  on 242  degrees of freedom
## (5 observations deleted due to missingness)
## AIC: 4078.6
##
## Number of Fisher Scoring iterations: 2
```

```
lm_MAC2 <- glm(data$MAC_30~data$t+data$X2010_ER+data$X2019_CV)
summary(lm_MAC2)
```

```
##
## Call:
## glm(formula = data$MAC_30 ~ data$t + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1739.1   -406.2    -45.9    439.8   4660.7
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2260.7580    104.4918   21.636 <2e-16 ***
```

```

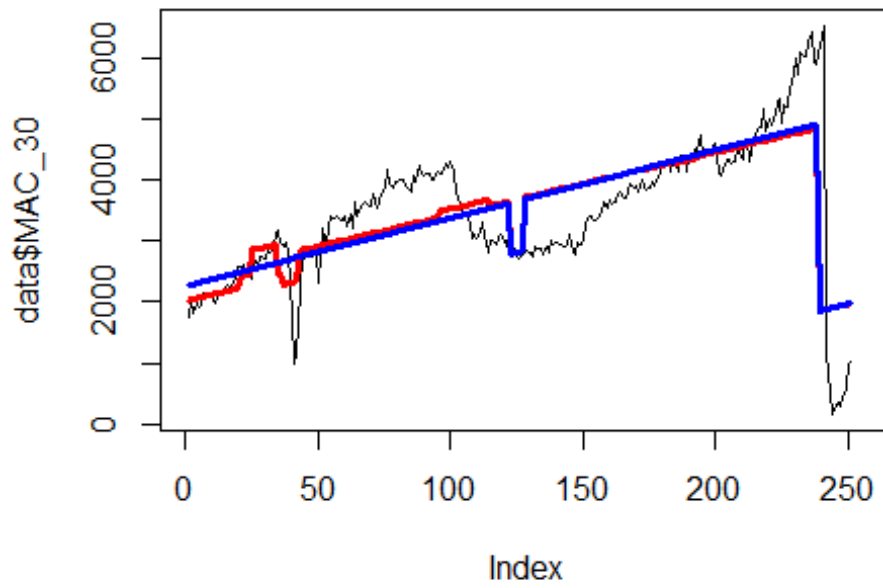
## data$t          11.1365      0.7566  14.719  <2e-16 ***
## data$X2010_ER  -844.0541    362.4901  -2.328  0.0207 *
## data$X2019_CV -3076.9559    247.5130 -12.431  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 643104.4)
##
## Null deviance: 335199819 on 250 degrees of freedom
## Residual deviance: 158846777 on 247 degrees of freedom
## (5 observations deleted due to missingness)
## AIC: 4075.2
##
## Number of Fisher Scoring iterations: 2

lm_MAC3 <- lm(data$MAC_30~data$t+data$X2010_ER+data$X2019_CV)
summary(lm_MAC3)

##
## Call:
## lm(formula = data$MAC_30 ~ data$t + data$X2010_ER + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1739.1  -406.2   -45.9   439.8  4660.7
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2260.7580   104.4918  21.636  <2e-16 ***
## data$t       11.1365     0.7566   14.719  <2e-16 ***
## data$X2010_ER -844.0541   362.4901  -2.328  0.0207 *
## data$X2019_CV -3076.9559   247.5130 -12.431  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 801.9 on 247 degrees of freedom
## (5 observations deleted due to missingness)
## Multiple R-squared:  0.5261, Adjusted R-squared:  0.5204
## F-statistic: 91.41 on 3 and 247 DF, p-value: < 2.2e-16

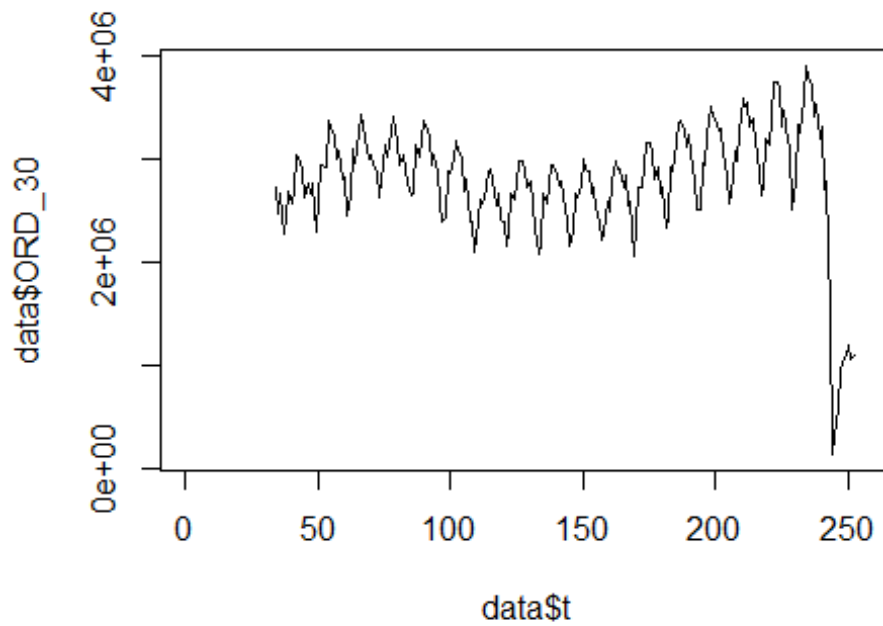
plot(data$MAC_30, type="l")
fit <- c(rep(0,0), lm_MAC1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_MAC2$fitted.values)
lines(fit2, col="blue", lwd=3)

```



Letiště Chicago

```
data$ORD_30 <- data$ORD/data$days * 30
plot(data$ORD_30~data$t, t="l")
```



```
lm_ORD1 <- glm(data$ORD_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR
S+data$X2008_FC+data$X2010_ER+data$X2019_CV)
summary(lm_ORD1)
```

```
##
## Call:
## glm(formula = data$ORD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1354305  -252560    3274    230626   1819777
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2699362.0    86282.5  31.285 < 2e-16 ***
## data$t       1529.9       552.5    2.769  0.00612 **
## data$X2001_FC      NA         NA      NA      NA
## data$X2001_TER  -42995.2   273546.6  -0.157  0.87526
## data$X2003_SARS -151175.9   177010.3  -0.854  0.39404
## data$X2008_FC  -197015.3   106225.9  -1.855  0.06503 .
## data$X2010_ER   -93466.6   195408.7  -0.478  0.63292
## data$X2019_CV -1583134.2   131902.5 -12.002 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 184983665484)
##
## Null deviance: 6.7781e+13  on 218  degrees of freedom
## Residual deviance: 3.9217e+13  on 212  degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6312
##
## Number of Fisher Scoring iterations: 2
```

```
lm_ORD2 <- glm(data$ORD_30~data$t+data$X2008_FC+data$X2019_CV)
summary(lm_ORD2)
```

```
##
## Call:
## glm(formula = data$ORD_30 ~ data$t + data$X2008_FC + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1354000  -265262    -8648    247846   1820894
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2661381.7    77937.7  34.148 < 2e-16 ***
## data$t       1733.1       512.6    3.381 0.000857 ***
## data$X2008_FC -180366.0   104616.5  -1.724 0.086133 .
```

```

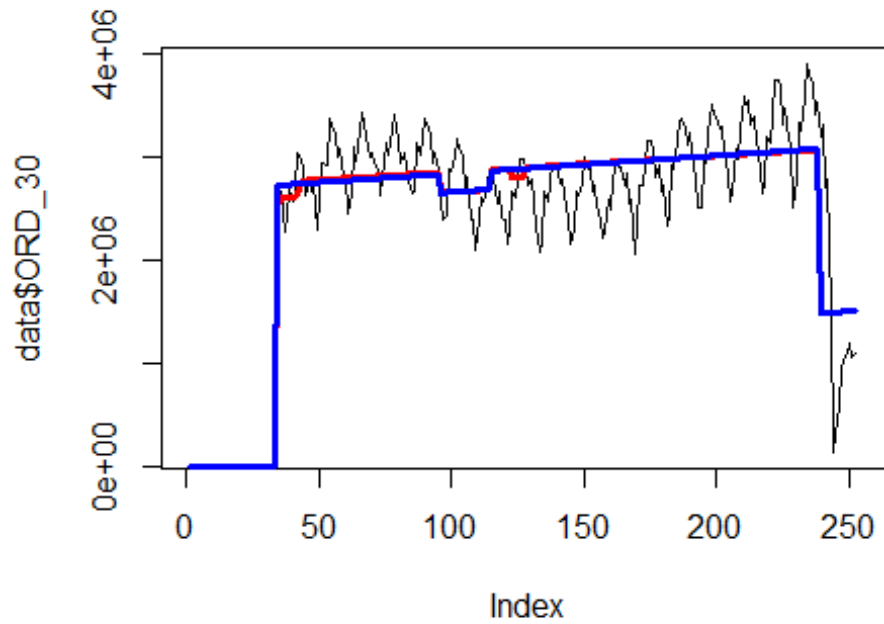
## data$X2019_CV -1595027.9  130597.3 -12.213 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 183387243234)
##
## Null deviance: 6.7781e+13 on 218 degrees of freedom
## Residual deviance: 3.9428e+13 on 215 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6307.2
##
## Number of Fisher Scoring iterations: 2

lm_ORD3 <- lm(data$ORD_30~data$t+data$X2008_FC+data$X2019_CV)
summary(lm_ORD3)

##
## Call:
## lm(formula = data$ORD_30 ~ data$t + data$X2008_FC + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1354000 -265262   -8648   247846  1820894
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2661381.7    77937.7  34.148 < 2e-16 ***
## data$t       1733.1       512.6   3.381 0.000857 ***
## data$X2008_FC -180366.0   104616.5  -1.724 0.086133 .
## data$X2019_CV -1595027.9   130597.3 -12.213 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 428200 on 215 degrees of freedom
## (37 observations deleted due to missingness)
## Multiple R-squared:  0.4183, Adjusted R-squared:  0.4102
## F-statistic: 51.54 on 3 and 215 DF, p-value: < 2.2e-16

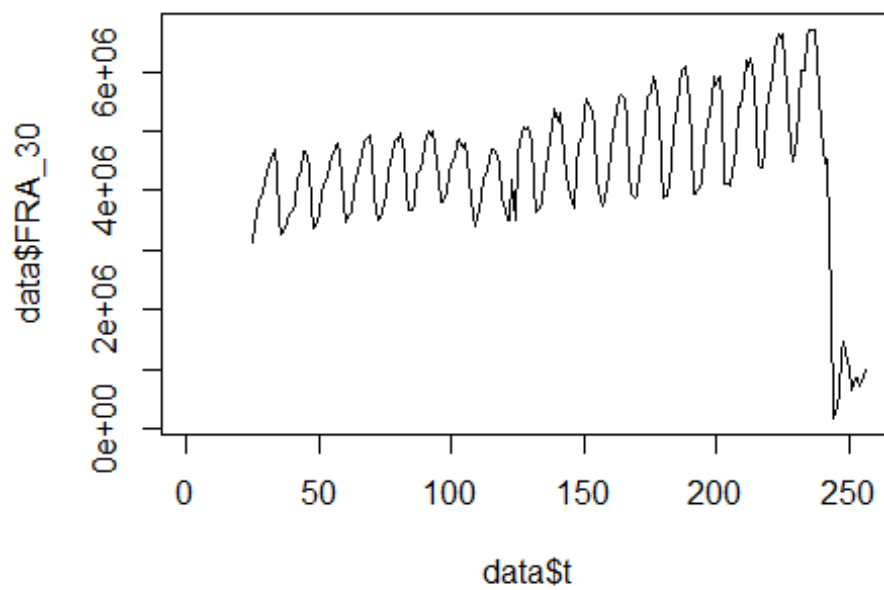
plot(data$ORD_30, type="l")
fit <- c(rep(0, 33), lm_ORD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 33), lm_ORD2$fitted.values)
lines(fit2, col="blue", lwd=3)

```



Letiště Frankfurt

```
data$FRA_30 <- data$FRA/data$days * 30
plot(data$FRA_30~data$t, t="l")
```




```
lm_FRA1 <- glm(data$FRA_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+
data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_FRA1)
```

```
##
## Call:
## glm(formula = data$FRA_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1546909  -607396   101881   527445  3365498
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3596383.3   146724.2   24.511 < 2e-16 ***
## data$t         8170.6     946.4     8.633  1.1e-15 ***
## data$X2001_FC      NA         NA         NA     NA
## data$X2001_TER   103998.6   252956.1    0.411   0.681
## data$X2008_FC  -188635.6   191975.9   -0.983   0.327
## data$X2009_SF  -273094.0   225432.2   -1.211   0.227
## data$X2010_ER    90051.3   409280.8    0.220   0.826
## data$X2019_CV -3856065.0   215277.5  -17.912 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 592628732793)
##
## Null deviance: 3.2782e+14 on 231 degrees of freedom
## Residual deviance: 1.3334e+14 on 225 degrees of freedom
## (24 observations deleted due to missingness)
## AIC: 6956.3
##
## Number of Fisher Scoring iterations: 2
```

```
lm_FRA2 <- glm(data$FRA_30~data$t+data$X2019_CV)
summary(lm_FRA2)
```

```
##
## Call:
## glm(formula = data$FRA_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1546802  -578834   46633   535285  3365758
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3560578.4   123628.1   28.801 <2e-16 ***
## data$t         8201.2     850.9     9.639 <2e-16 ***
## data$X2019_CV -3827830.1   213011.6  -17.970 <2e-16 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 591613933481)
##
## Null deviance: 3.2782e+14 on 231 degrees of freedom
## Residual deviance: 1.3548e+14 on 229 degrees of freedom
## (24 observations deleted due to missingness)
## AIC: 6952
##
## Number of Fisher Scoring iterations: 2

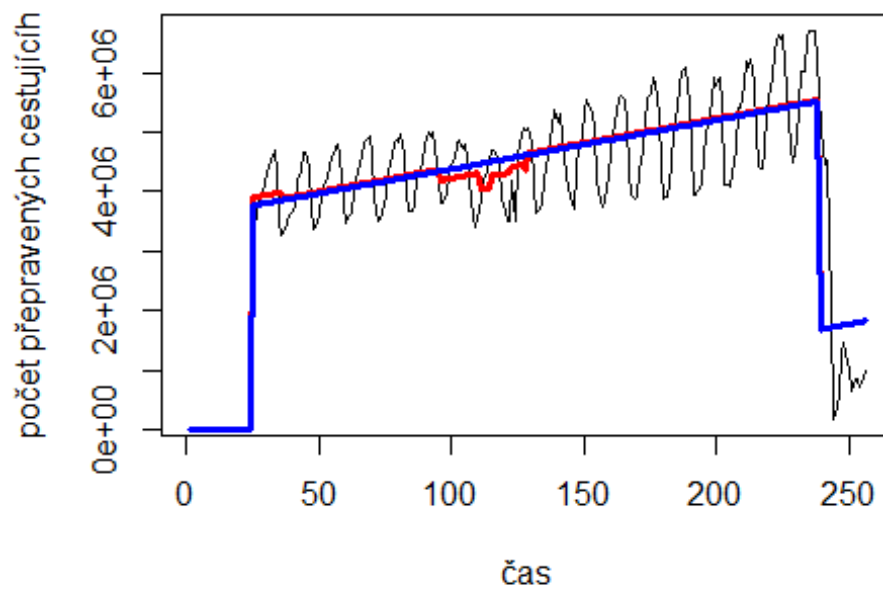
lm_FRA3 <- lm(data$FRA_30~data$t+data$X2019_CV)
summary(lm_FRA3)

##
## Call:
## lm(formula = data$FRA_30 ~ data$t + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1546802 -578834   46633   535285  3365758
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3560578.4   123628.1   28.801  <2e-16 ***
## data$t         8201.2       850.9    9.639  <2e-16 ***
## data$X2019_CV -3827830.1   213011.6  -17.970  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 769200 on 229 degrees of freedom
## (24 observations deleted due to missingness)
## Multiple R-squared:  0.5867, Adjusted R-squared:  0.5831
## F-statistic: 162.6 on 2 and 229 DF,  p-value: < 2.2e-16

plot(data$FRA_30, type="l", xlab="čas", ylab="počet přepravených cestujících", ma
in="Letiště Frankfurt")
fit <- c(rep(0, 24), lm_FRA1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_FRA2$fitted.values)
lines(fit2, col="blue", lwd=3)

```

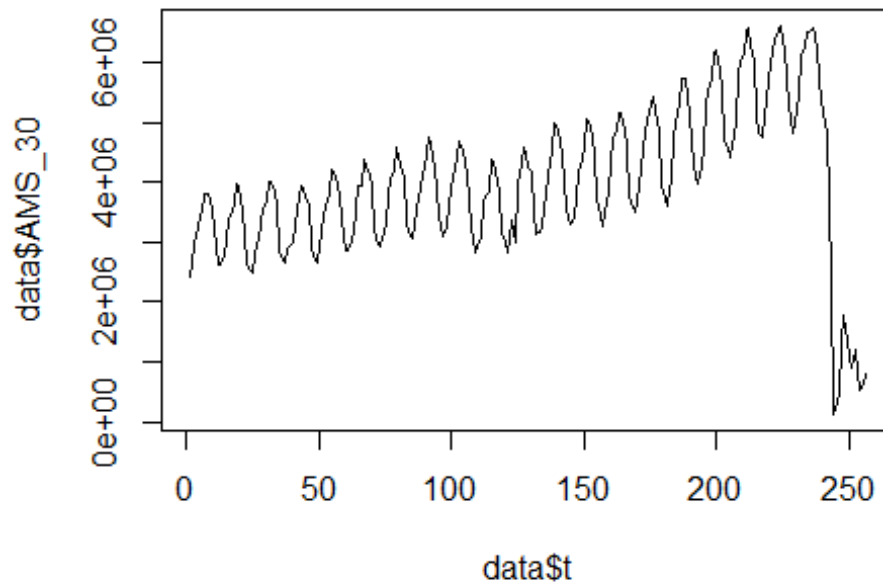
Letiště Frankfurt



Letiště Amsterdam

```
data$AMS_30 <- data$AMS/data$days * 30
```

```
plot(data$AMS_30~data$t, t="l")
```



```
lm_AMS1 <- glm(data$AMS_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+
data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_AMS1)
```

```
##
## Call:
## glm(formula = data$AMS_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1717253  -572072    20263   538998   3542113
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2681533.5  145517.1  18.428  <2e-16 ***
## data$t       12414.8    945.5   13.130  <2e-16 ***
## data$X2001_FC  367108.1  203907.0   1.800   0.0730 .
## data$X2001_TER 112552.8  222054.2   0.507   0.6127
## data$X2008_FC -214770.6  197007.0  -1.090   0.2767
## data$X2009_SF -415491.3  231759.9  -1.793   0.0742 .
## data$X2010_ER  -15706.7  421051.1  -0.037   0.9703
## data$X2019_CV -3867488.7  220790.0 -17.517  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 627227583382)
```

```

##
## Null deviance: 3.9783e+14 on 255 degrees of freedom
## Residual deviance: 1.5555e+14 on 248 degrees of freedom
## AIC: 7690.5
##
## Number of Fisher Scoring iterations: 2

lm_AMS2 <- glm(data$AMS_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_AMS2)

##
## Call:
## glm(formula = data$AMS_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1720516  -586089   37505   528145  3534188
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2826539.9   104305.2  27.099  <2e-16 ***
## data$t       11482.5     749.1   15.329  <2e-16 ***
## data$X2009_SF -501171.4   194686.1  -2.574  0.0106 *
## data$X2019_CV -3781738.1   217016.4 -17.426  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 630649620269)
##
## Null deviance: 3.9783e+14 on 255 degrees of freedom
## Residual deviance: 1.5892e+14 on 252 degrees of freedom
## AIC: 7688
##
## Number of Fisher Scoring iterations: 2

lm_AMS3 <- lm(data$AMS_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_AMS3)

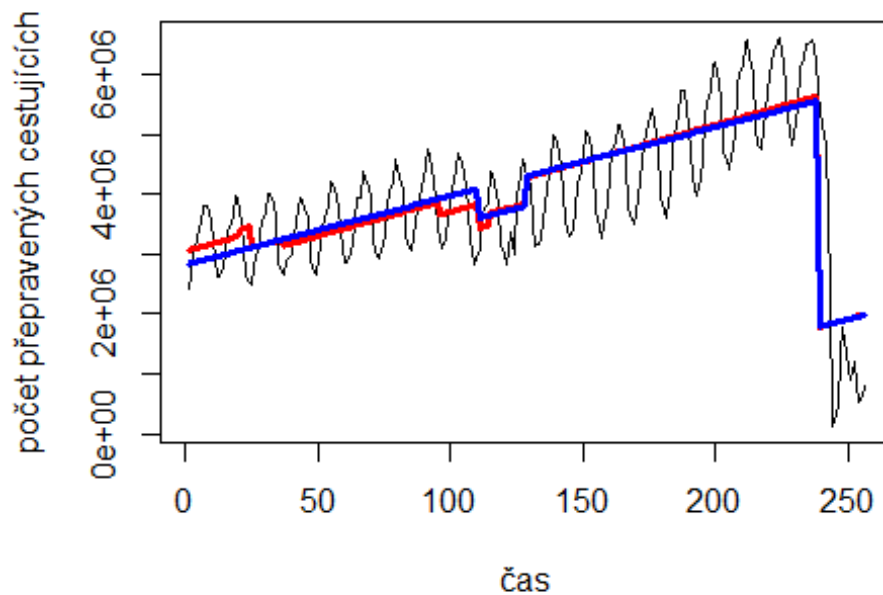
##
## Call:
## lm(formula = data$AMS_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1720516  -586089   37505   528145  3534188
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2826539.9   104305.2  27.099  <2e-16 ***
## data$t       11482.5     749.1   15.329  <2e-16 ***
## data$X2009_SF -501171.4   194686.1  -2.574  0.0106 *

```

```
## data$X2019_CV -3781738.1 217016.4 -17.426 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 794100 on 252 degrees of freedom
## Multiple R-squared:  0.6005, Adjusted R-squared:  0.5958
## F-statistic: 126.3 on 3 and 252 DF,  p-value: < 2.2e-16

plot(data$AMS_30, type="l", xlab="čas", ylab="počet přepravených cestujících",
      main="Letiště Amsterdam")
fit <- c(rep(0, 0), lm_AMS1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_AMS2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

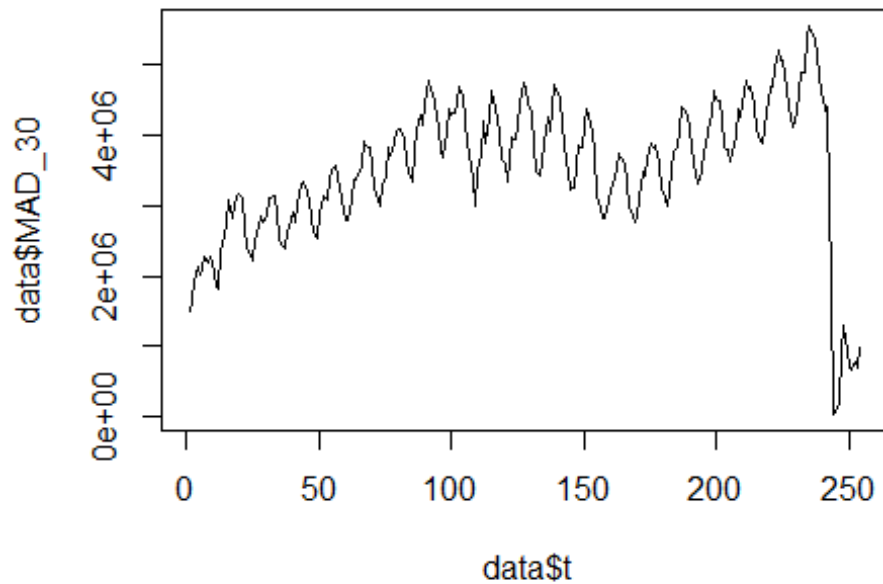
Letiště Amsterdam



Letiště MAdrid

```
data$MAD_30 <- data$MAD/data$days * 30
```

```
plot(data$MAD_30~data$t, t="l")
```



```
lm_MAD1 <- glm(data$MAD_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+
data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MAD1)
```

```
##
## Call:
## glm(formula = data$MAD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1640993  -381579   -51737    384524   2972569
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2899432.8  122055.7  23.755 < 2e-16 ***
## data$t       6403.4     793.1    8.074 3.04e-14 ***
## data$X2001_FC -554639.1  171021.8  -3.243  0.00135 **
## data$X2001_TER -207716.5  186239.4  -1.115  0.26580
## data$X2008_FC  362483.2  165230.3   2.194  0.02919 *
## data$X2009_SF  272028.0  194377.2   1.399  0.16293
## data$X2010_ER  287471.3  353135.8   0.814  0.41640
## data$X2019_CV -2788146.8  192928.6 -14.452 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 441203678222)
```

```

##
## Null deviance: 2.4794e+14 on 253 degrees of freedom
## Residual deviance: 1.0854e+14 on 246 degrees of freedom
## (2 observations deleted due to missingness)
## AIC: 7541.1
##
## Number of Fisher Scoring iterations: 2

lm_MAD2 <- glm(data$MAD_30~data$t+data$X2001_FC+data$X2008_FC+data$X2009_SF+d
ata$X2019_CV)
summary(lm_MAD2)

##
## Call:
## glm(formula = data$MAD_30 ~ data$t + data$X2001_FC + data$X2008_FC +
## data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -1640212 -403054 -67235 374114 2974911
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 2845221.1 111280.6 25.568 < 2e-16 ***
## data$t 6715.6 741.5 9.057 < 2e-16 ***
## data$X2001_FC -538950.4 170279.8 -3.165 0.00174 **
## data$X2008_FC 363588.9 162564.9 2.237 0.02620 *
## data$X2009_SF 368529.0 165381.8 2.228 0.02675 *
## data$X2019_CV -2810913.5 191932.2 -14.645 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 441069326401)
##
## Null deviance: 2.4794e+14 on 253 degrees of freedom
## Residual deviance: 1.0939e+14 on 248 degrees of freedom
## (2 observations deleted due to missingness)
## AIC: 7539.1
##
## Number of Fisher Scoring iterations: 2

lm_MAD3 <- lm(data$MAD_30~data$t+data$X2001_FC+data$X2008_FC+data$X2009_SF+da
ta$X2019_CV)
summary(lm_MAD3)

##
## Call:
## lm(formula = data$MAD_30 ~ data$t + data$X2001_FC + data$X2008_FC +
## data$X2009_SF + data$X2019_CV)
##
## Residuals:

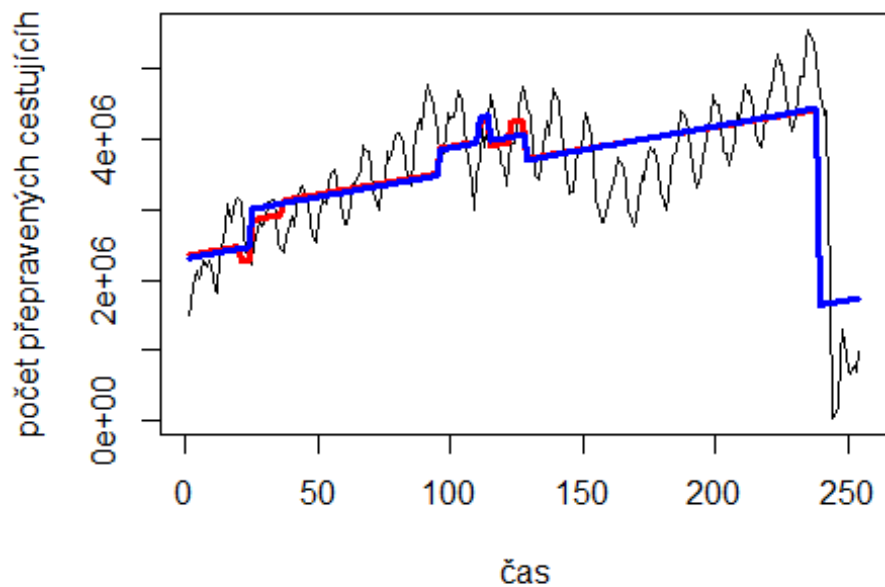
```



```
##      Min      1Q   Median      3Q      Max
## -1640212 -403054  -67235   374114 2974911
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2845221.1  111280.6  25.568 < 2e-16 ***
## data$t        6715.6     741.5   9.057 < 2e-16 ***
## data$X2001_FC -538950.4  170279.8  -3.165  0.00174 **
## data$X2008_FC  363588.9  162564.9   2.237  0.02620 *
## data$X2009_SF  368529.0  165381.8   2.228  0.02675 *
## data$X2019_CV -2810913.5  191932.2 -14.645 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 664100 on 248 degrees of freedom
## (2 observations deleted due to missingness)
## Multiple R-squared:  0.5588, Adjusted R-squared:  0.5499
## F-statistic: 62.82 on 5 and 248 DF,  p-value: < 2.2e-16

plot(data$MAD_30, type="l",xlab="čas",ylab="počet přepravených cestujících",mai="Letiště Madrid")
fit <- c(rep(0, 0), lm_MAD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_MAD2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

Letiště Madrid

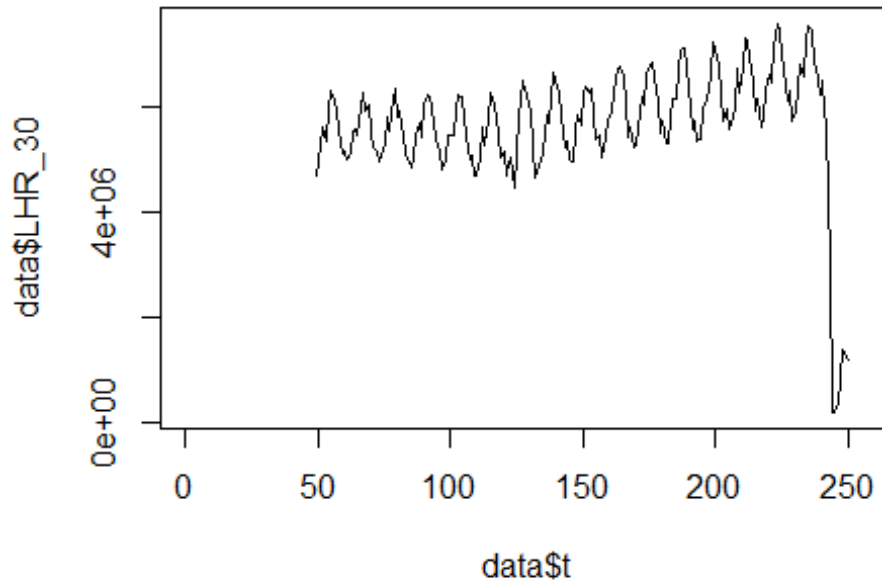


Letiště London

LHR

```
data$LHR_30 <- data$LHR/data$days * 30
```

```
plot(data$LHR_30~data$t, t="l")
```



```
lm_LHR1 <- glm(data$LHR_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+  
data$X2009_SF+data$X2010_ER+data$X2019_CV)
```

```
summary(lm_LHR1)
```

```
##
```

```
## Call:
```

```
## glm(formula = data$LHR_30 ~ data$t + data$X2001_FC + data$X2001_TER +  
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -2515423  -462301  -27074   454003  3783376
```

```
##
```

```
## Coefficients: (2 not defined because of singularities)
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)    4999843    179058  27.923 < 2e-16 ***  
## data$t         6331       1117    5.669 5.1e-08 ***  
## data$X2001_FC      NA         NA      NA      NA  
## data$X2001_TER     NA         NA      NA      NA  
## data$X2008_FC   -260237    205994  -1.263  0.208  
## data$X2009_SF   -162809    239731  -0.679  0.498  
## data$X2010_ER   -259104    433605  -0.598  0.551  
## data$X2019_CV  -3822477    266159 -14.362 < 2e-16 ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 6.65022e+11)
##
##      Null deviance: 2.7020e+14  on 201  degrees of freedom
## Residual deviance: 1.3034e+14  on 196  degrees of freedom
## (54 observations deleted due to missingness)
## AIC: 6080.2
##
## Number of Fisher Scoring iterations: 2

lm_LHR2 <- glm(data$LHR_30~data$t+data$X2019_CV)
summary(lm_LHR2)

##
## Call:
## glm(formula = data$LHR_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -2515174   -518004   -25285    483392   3785617
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   4880126    165866  29.422 < 2e-16 ***
## data$t         6828         1080   6.325 1.64e-09 ***
## data$X2019_CV -3824501    266336 -14.360 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 666433564585)
##
##      Null deviance: 2.7020e+14  on 201  degrees of freedom
## Residual deviance: 1.3262e+14  on 199  degrees of freedom
## (54 observations deleted due to missingness)
## AIC: 6077.7
##
## Number of Fisher Scoring iterations: 2

lm_LHR3 <- lm(data$LHR_30~data$t+data$X2019_CV)
summary(lm_LHR3)

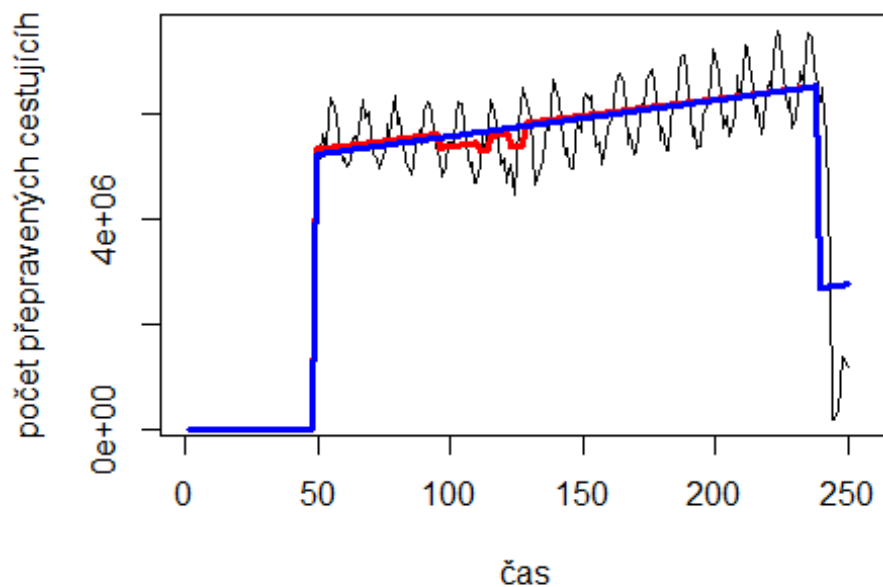
##
## Call:
## lm(formula = data$LHR_30 ~ data$t + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2515174   -518004   -25285    483392   3785617
##

```

```
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  4880126   165866  29.422 < 2e-16 ***
## data$t       6828       1080   6.325 1.64e-09 ***
## data$X2019_CV -3824501   266336 -14.360 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 816400 on 199 degrees of freedom
## (54 observations deleted due to missingness)
## Multiple R-squared:  0.5092, Adjusted R-squared:  0.5042
## F-statistic: 103.2 on 2 and 199 DF,  p-value: < 2.2e-16

plot(data$LHR_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
main="Letiště London Heathrow")
fit <- c(rep(0, 48), lm_LHR1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 48), lm_LHR2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

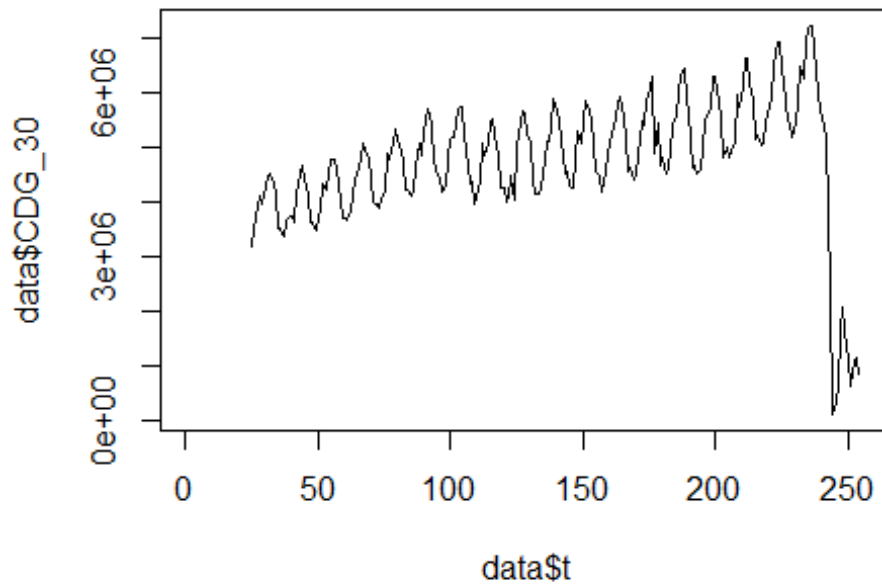
Letiště London Heathrow



Letiště CDG

```
data$CDG_30 <- data$CDG/data$days * 30
```

```
plot(data$CDG_30~data$t, t="l")
```



```
lm_CDG1 <- glm(data$CDG_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+
data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_CDG1)
```

```
##
## Call:
## glm(formula = data$CDG_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -2049500  -524775    33640    438975   3530571
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3694254.4   146766.7   25.171  <2e-16 ***
## data$t         9599.8      946.7    10.141  <2e-16 ***
## data$X2001_FC          NA          NA         NA      NA
## data$X2001_TER   -23131.9   253011.0  -0.091    0.927
## data$X2008_FC    115483.8   192014.5  0.601    0.548
## data$X2009_SF   -48392.3   225476.9 -0.215    0.830
## data$X2010_ER     44005.8   409361.8  0.107    0.914
## data$X2019_CV -3859314.5   224263.0 -17.209  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 592863254846)
```

```

##
## Null deviance: 3.2084e+14 on 229 degrees of freedom
## Residual deviance: 1.3221e+14 on 223 degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 6896.5
##
## Number of Fisher Scoring iterations: 2

lm_CDG2 <- glm(data$CDG_30~data$t+data$X2019_CV)
summary(lm_CDG2)

##
## Call:
## glm(formula = data$CDG_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -2049564 -529146 35900 451737 3530378
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 3703562.5 122782.4 30.16 <2e-16 ***
## data$t 9574.0 845.1 11.33 <2e-16 ***
## data$X2019_CV -3862260.2 220538.8 -17.51 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 583463098774)
##
## Null deviance: 3.2084e+14 on 229 degrees of freedom
## Residual deviance: 1.3245e+14 on 227 degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 6888.9
##
## Number of Fisher Scoring iterations: 2

lm_CDG3 <- lm(data$CDG_30~data$t+data$X2019_CV)
summary(lm_CDG3)

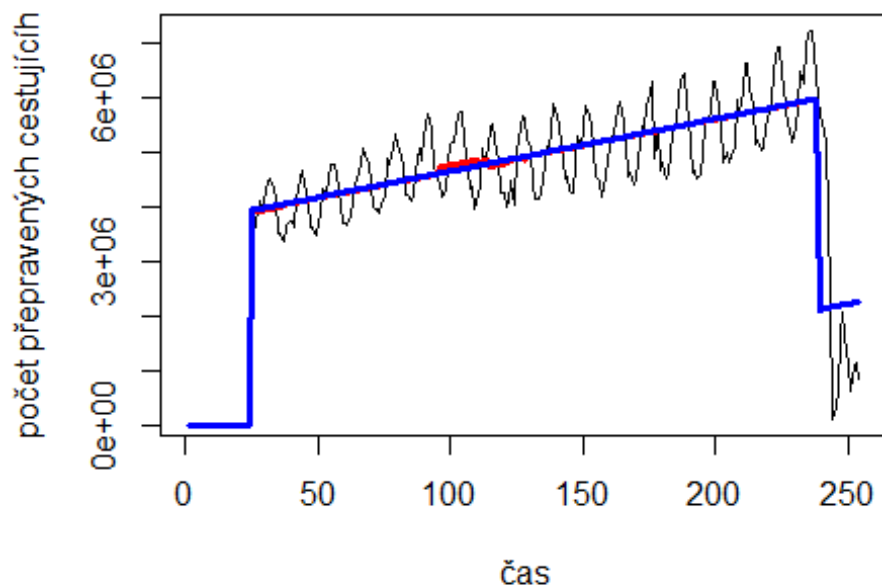
##
## Call:
## lm(formula = data$CDG_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -2049564 -529146 35900 451737 3530378
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 3703562.5 122782.4 30.16 <2e-16 ***
## data$t 9574.0 845.1 11.33 <2e-16 ***

```

```
## data$X2019_CV -3862260.2  220538.8  -17.51  <2e-16  ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 763800 on 227 degrees of freedom
## (26 observations deleted due to missingness)
## Multiple R-squared:  0.5872, Adjusted R-squared:  0.5836
## F-statistic: 161.4 on 2 and 227 DF,  p-value: < 2.2e-16

plot(data$CDG_30, type="l", xlab = "čas", ylab = "počet přepravených cestujících",
main="Letiště Charles de Gaulle")
fit <- c(rep(0, 24), lm_CDG1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_CDG2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

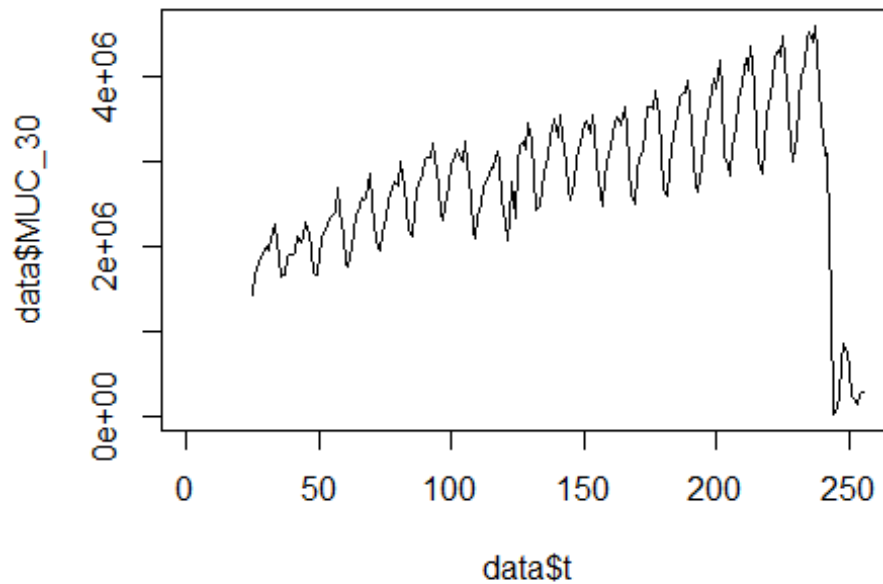
Letiště Charles de Gaulle



Letiště MUC

```
data$MUC_30 <- data$MUC/data$days * 30

plot(data$MUC_30~data$t, t="l")
```



```
lm_MUC1 <- glm(data$MUC_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+
data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MUC1)
```

```
##
## Call:
## glm(formula = data$MUC_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1031522  -306339   37292   288398  2502119
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1728116     96737  17.864  <2e-16 ***
## data$t         9221         624  14.778  <2e-16 ***
## data$X2001_FC      NA          NA      NA      NA
## data$X2001_TER  -129276    166771  -0.775   0.439
## data$X2008_FC    37597    126567   0.297   0.767
## data$X2009_SF  -116953    148623  -0.787   0.432
## data$X2010_ER   135573    269832   0.502   0.616
## data$X2019_CV  -2924232    144724 -20.206  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 257587680116)
```



```

##
## Null deviance: 1.8427e+14 on 230 degrees of freedom
## Residual deviance: 5.7700e+13 on 224 degrees of freedom
## (25 observations deleted due to missingness)
## AIC: 6733.9
##
## Number of Fisher Scoring iterations: 2

lm_MUC2 <- glm(data$MUC_30~data$t+data$X2019_CV)
summary(lm_MUC2)

##
## Call:
## glm(formula = data$MUC_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -1030939 -303048 26397 300364 2503672
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1692009.2 81081.8 20.87 <2e-16 ***
## data$t 9415.2 558.1 16.87 <2e-16 ***
## data$X2019_CV -2936071.5 142519.1 -20.60 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 254459082862)
##
## Null deviance: 1.8427e+14 on 230 degrees of freedom
## Residual deviance: 5.8017e+13 on 228 degrees of freedom
## (25 observations deleted due to missingness)
## AIC: 6727.1
##
## Number of Fisher Scoring iterations: 2

lm_MUC3 <- lm(data$MUC_30~data$t+data$X2019_CV)
summary(lm_MUC3)

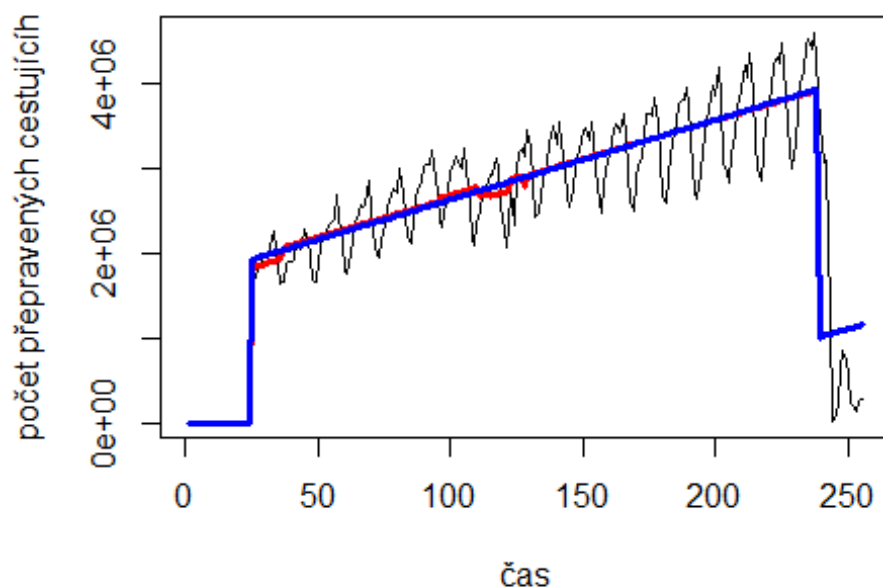
##
## Call:
## lm(formula = data$MUC_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -1030939 -303048 26397 300364 2503672
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1692009.2 81081.8 20.87 <2e-16 ***
## data$t 9415.2 558.1 16.87 <2e-16 ***

```

```
## data$X2019_CV -2936071.5 142519.1 -20.60 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 504400 on 228 degrees of freedom
## (25 observations deleted due to missingness)
## Multiple R-squared: 0.6852, Adjusted R-squared: 0.6824
## F-statistic: 248.1 on 2 and 228 DF, p-value: < 2.2e-16

plot(data$MUC_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="Letiště Mnichov")
fit <- c(rep(0, 24), lm_MUC1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_MUC2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

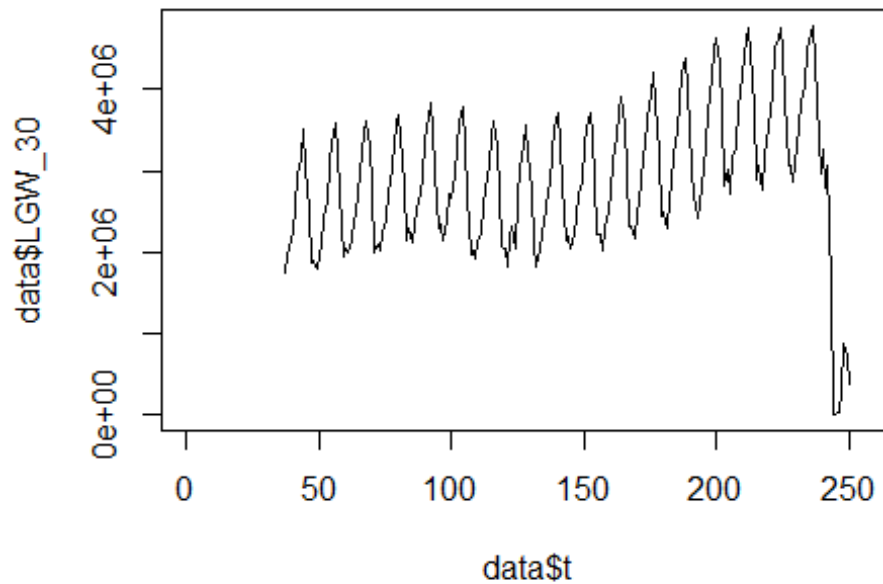
Letiště Mnichov



Letiště LGW

```
data$LGW_30 <- data$LGW/data$days * 30

plot(data$LGW_30~data$t, t="l")
```



```
lm_LGW1 <- glm(data$LGW_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+
data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_LGW1)
```

```
##
## Call:
## glm(formula = data$LGW_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1329550  -572723   -33838    605278   1957330
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2110796.1  132751.7  15.900 < 2e-16 ***
## data$t         6749.7      856.3    7.882 1.78e-13 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER          NA          NA      NA      NA
## data$X2008_FC  -126335.8  173642.6  -0.728  0.468
## data$X2009_SF  -139780.2  203902.0  -0.686  0.494
## data$X2010_ER  -139953.3  370191.5  -0.378  0.706
## data$X2019_CV -2428130.1  225678.7 -10.759 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 484833588926)
```

```

##
## Null deviance: 1.6676e+14 on 213 degrees of freedom
## Residual deviance: 1.0085e+14 on 208 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 6373.3
##
## Number of Fisher Scoring iterations: 2

lm_LGW2 <- glm(data$LGW_30~data$t+data$X2019_CV)
summary(lm_LGW2)

##
## Call:
## glm(formula = data$LGW_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -1329646 -576835 -93882 553121 1958195
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 2056564.1 125135.4 16.435 < 2e-16 ***
## data$t 6942.0 837.8 8.286 1.35e-14 ***
## data$X2019_CV -2420893.8 224969.3 -10.761 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 482244745827)
##
## Null deviance: 1.6676e+14 on 213 degrees of freedom
## Residual deviance: 1.0175e+14 on 211 degrees of freedom
## (42 observations deleted due to missingness)
## AIC: 6369.3
##
## Number of Fisher Scoring iterations: 2

lm_LGW3 <- lm(data$LGW_30~data$t+data$X2019_CV)
summary(lm_LGW3)

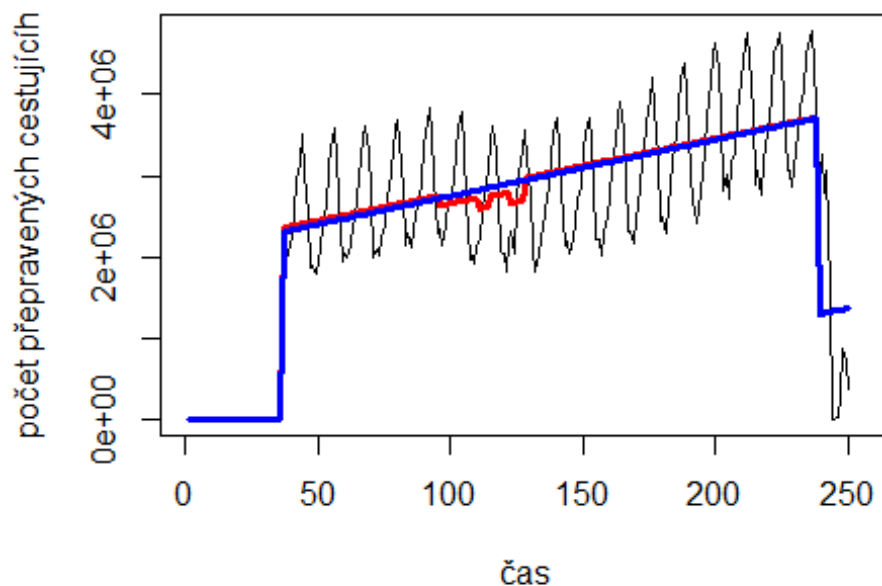
##
## Call:
## lm(formula = data$LGW_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -1329646 -576835 -93882 553121 1958195
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 2056564.1 125135.4 16.435 < 2e-16 ***
## data$t 6942.0 837.8 8.286 1.35e-14 ***

```

```
## data$X2019_CV -2420893.8 224969.3 -10.761 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 694400 on 211 degrees of freedom
## (42 observations deleted due to missingness)
## Multiple R-squared: 0.3898, Adjusted R-squared: 0.384
## F-statistic: 67.4 on 2 and 211 DF, p-value: < 2.2e-16

plot(data$LGW_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="Letiště London Gatwick")
fit <- c(rep(0, 36), lm_LGW1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 36), lm_LGW2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

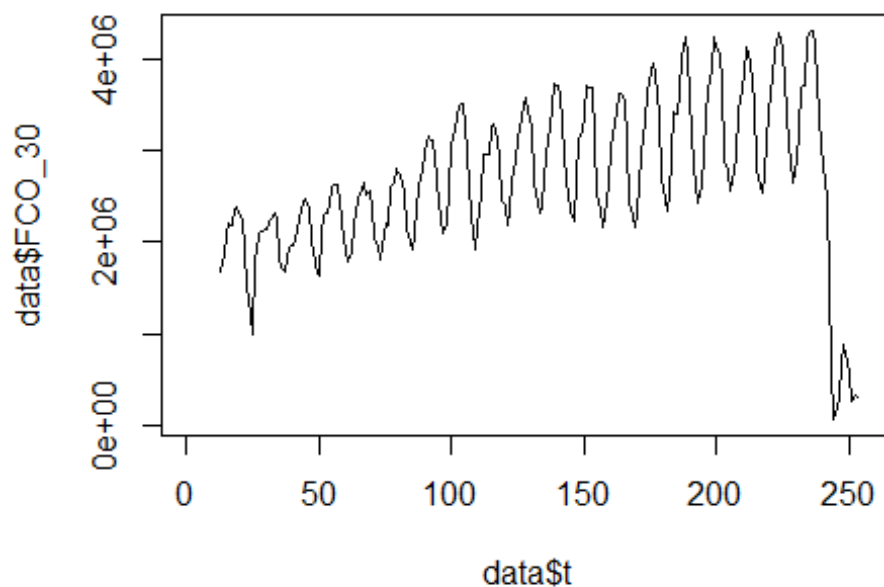
Letiště London Gatwick



Letiště FCO

```
data$FCO_30 <- data$FCO/data$days * 30
```

```
plot(data$FCO_30~data$t, t="l")
```



```
lm_FC01 <- glm(data$FCO_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+
data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_FC01)

##
## Call:
## glm(formula = data$FCO_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -975060  -426617    77784   354701  2031946
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1840458.9   100662.0   18.284  <2e-16 ***
## data$t       7678.7      653.3    11.754  <2e-16 ***
## data$X2001_FC  68424.0   177105.8    0.386    0.700
## data$X2001_TER -152946.0   156948.2   -0.975    0.331
## data$X2008_FC  73971.0   135186.8    0.547    0.585
## data$X2009_SF  75668.1   158974.4    0.476    0.635
## data$X2010_ER  204761.0   288782.0    0.709    0.479
## data$X2019_CV -2671729.2   161602.8  -16.533  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 295048281073)
```

```

##
## Null deviance: 1.7152e+14 on 240 degrees of freedom
## Residual deviance: 6.8746e+13 on 233 degrees of freedom
## (15 observations deleted due to missingness)
## AIC: 7058.7
##
## Number of Fisher Scoring iterations: 2

lm_FC02 <- glm(data$FCO_30~data$t+data$X2019_CV)
summary(lm_FC02)

##
## Call:
## glm(formula = data$FCO_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -1041064 -433027 62231 363180 2032761
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1835428.6 78022.5 23.52 <2e-16 ***
## data$t 7795.1 551.6 14.13 <2e-16 ***
## data$X2019_CV -2695338.7 158840.3 -16.97 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 292754538792)
##
## Null deviance: 1.7152e+14 on 240 degrees of freedom
## Residual deviance: 6.9676e+13 on 238 degrees of freedom
## (15 observations deleted due to missingness)
## AIC: 7051.9
##
## Number of Fisher Scoring iterations: 2

lm_FC03 <- lm(data$FCO_30~data$t+data$X2019_CV)
summary(lm_FC03)

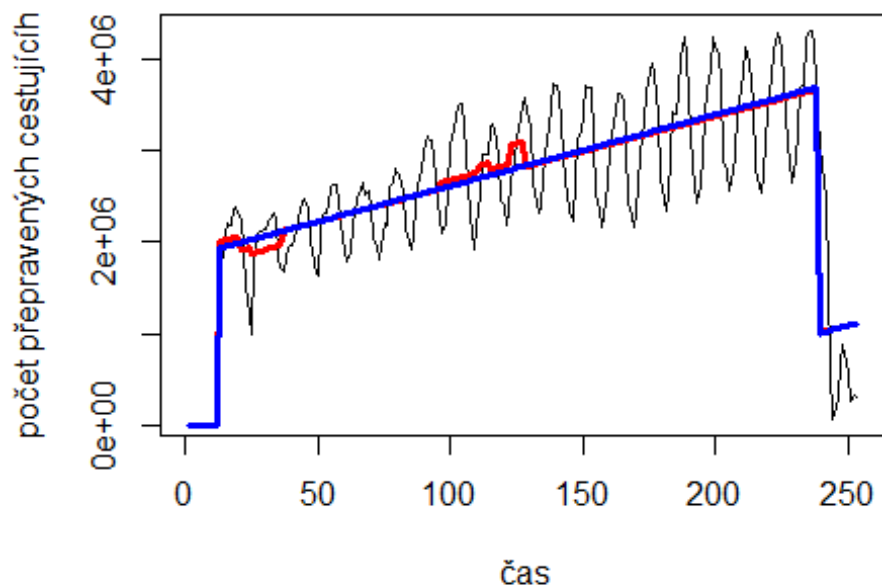
##
## Call:
## lm(formula = data$FCO_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -1041064 -433027 62231 363180 2032761
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1835428.6 78022.5 23.52 <2e-16 ***
## data$t 7795.1 551.6 14.13 <2e-16 ***

```

```
## data$X2019_CV -2695338.7 158840.3 -16.97 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 541100 on 238 degrees of freedom
## (15 observations deleted due to missingness)
## Multiple R-squared:  0.5938, Adjusted R-squared:  0.5904
## F-statistic: 173.9 on 2 and 238 DF,  p-value: < 2.2e-16

plot(data$FCO_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="Letiště Řím Fiumicino")
fit <- c(rep(0, 12), lm_FC01$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 12), lm_FC02$fitted.values)
lines(fit2, col="blue", lwd=3)
```

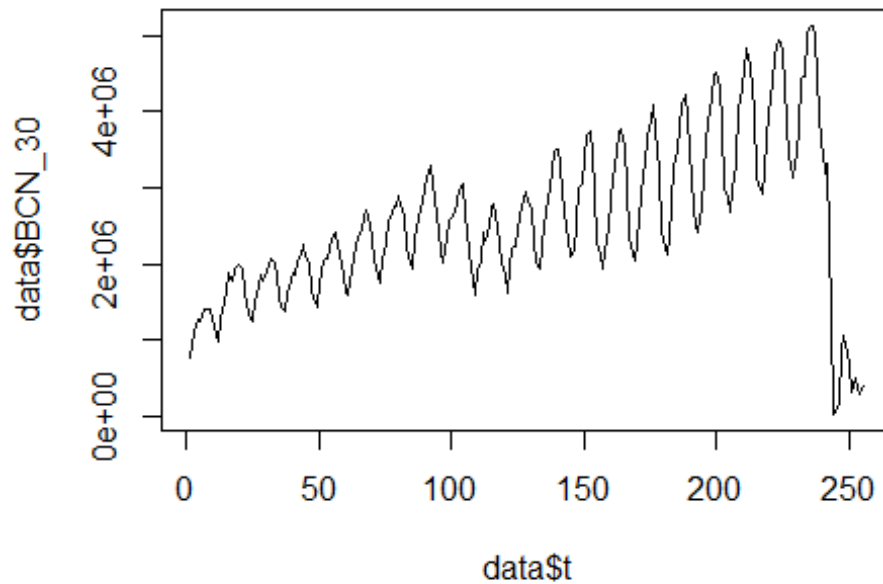
Letiště Řím Fiumicino



Letiště BCN

```
data$BCN_30 <- data$BCN/data$days * 30
```

```
plot(data$BCN_30~data$t, t="l")
```

```
lm_BCN1 <- glm(data$BCN_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+
data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_BCN1)
```

```
##
## Call:
## glm(formula = data$BCN_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1285670  -396943    5685   376395  2483406
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1388731.8  114212.1  12.159  <2e-16 ***
## data$t       11101.4    742.1   14.959  <2e-16 ***
## data$X2001_FC   -97525.4  160035.8  -0.609   0.5428
## data$X2001_TER   19133.9  174277.1   0.110   0.9127
## data$X2008_FC  -126195.1  154618.2  -0.816   0.4152
## data$X2009_SF  -350859.9  181893.3  -1.929   0.0549 .
## data$X2010_ER    48565.5  330455.6   0.147   0.8833
## data$X2019_CV -2929552.2  176724.5 -16.577  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 386350779970)
```

```

##
##      Null deviance: 2.7643e+14  on 254  degrees of freedom
## Residual deviance: 9.5429e+13  on 247  degrees of freedom
## (1 observation deleted due to missingness)
## AIC: 7536.9
##
## Number of Fisher Scoring iterations: 2

lm_BCN2 <- glm(data$BCN_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_BCN2)

##
## Call:
## glm(formula = data$BCN_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1281975   -397564    18146    383031   2485248
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1343372.9    81158.5  16.552  <2e-16 ***
## data$t       11331.6      582.9   19.441  <2e-16 ***
## data$X2009_SF -347561.1   151478.8  -2.294  0.0226 *
## data$X2019_CV -2941049.0   172383.6 -17.061  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 381787822830)
##
##      Null deviance: 2.7643e+14  on 254  degrees of freedom
## Residual deviance: 9.5829e+13  on 251  degrees of freedom
## (1 observation deleted due to missingness)
## AIC: 7530
##
## Number of Fisher Scoring iterations: 2

lm_BCN3 <- lm(data$BCN_30~data$t++data$X2009_SF+data$X2019_CV)
summary(lm_BCN3)

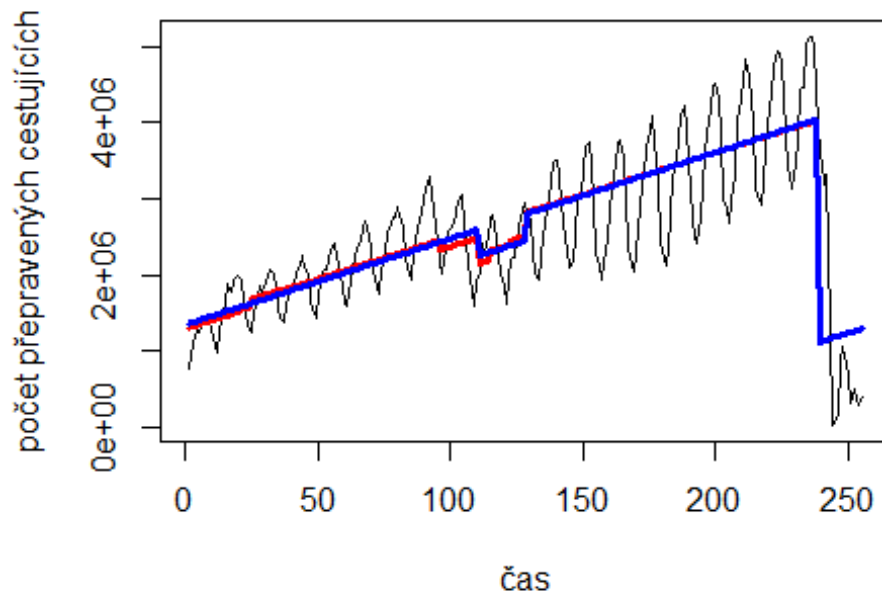
##
## Call:
## lm(formula = data$BCN_30 ~ data$t + +data$X2009_SF + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1281975   -397564    18146    383031   2485248
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1343372.9    81158.5  16.552  <2e-16 ***

```

```
## data$t          11331.6      582.9  19.441  <2e-16 ***
## data$X2009_SF  -347561.1  151478.8  -2.294  0.0226 *
## data$X2019_CV -2941049.0  172383.6 -17.061  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 617900 on 251 degrees of freedom
## (1 observation deleted due to missingness)
## Multiple R-squared:  0.6533, Adjusted R-squared:  0.6492
## F-statistic: 157.7 on 3 and 251 DF,  p-value: < 2.2e-16

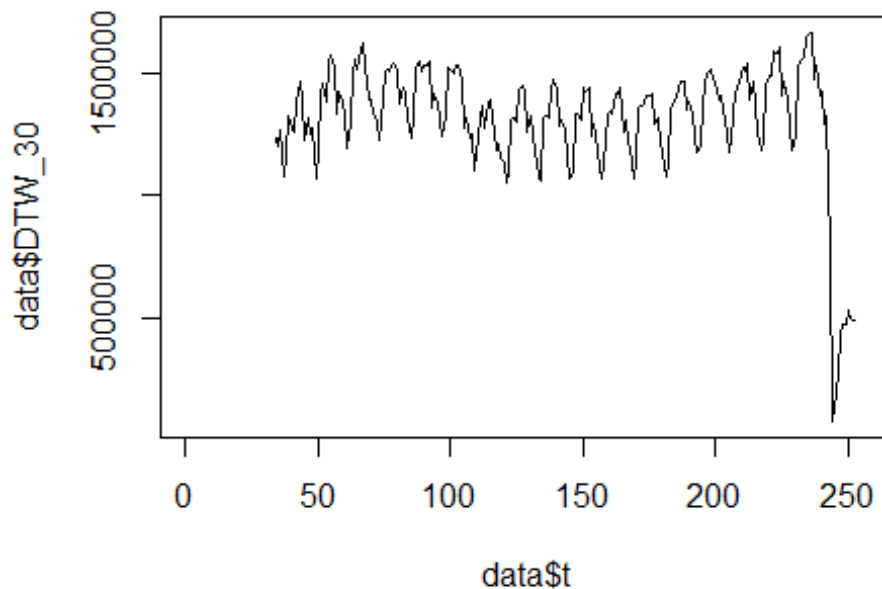
plot(data$BCN_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="Letiště Barcelona")
fit <- c(rep(0, 0), lm_BCN1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 0), lm_BCN2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

Letiště Barcelona



Letiště DTW

```
data$DTW_30 <- data$DTW/data$days * 30
plot(data$DTW_30~data$t, t="l")
```



```
lm_DTW1 <- glm(data$DTW_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR
S+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_DTW1)
```

```
##
## Call:
## glm(formula = data$DTW_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -609375  -110783    4342   103466   739292
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1363325.67   36113.66  37.751  <2e-16 ***
## data$t       37.33      229.48   0.163  0.8709
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER  -59102.44  113339.48  -0.521  0.6026
## data$X2003_SARS -105324.54   73442.19  -1.434  0.1530
## data$X2008_FC    7053.73   44660.78   0.158  0.8747
## data$X2009_SF  -114846.84   52256.32  -2.198  0.0291 *
## data$X2010_ER   109161.32   94733.91   1.152  0.2505
## data$X2019_CV  -686646.62   54653.90 -12.564  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 31747882288)
##
## Null deviance: 1.2868e+13 on 218 degrees of freedom
## Residual deviance: 6.6988e+12 on 211 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 5927
##
## Number of Fisher Scoring iterations: 2

lm_DTW2 <- glm(data$DTW_30~data$X2019_CV)
summary(lm_DTW2)

##
## Call:
## glm(formula = data$DTW_30 ~ data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -609431 -111768 2625 111007 739087
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1356659 12518 108.38 <2e-16 ***
## data$X2019_CV -670816 49511 -13.55 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 32124474876)
##
## Null deviance: 1.2868e+13 on 218 degrees of freedom
## Residual deviance: 6.9710e+12 on 217 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 5923.7
##
## Number of Fisher Scoring iterations: 2

lm_DTW3 <- lm(data$DTW_30~data$X2019_CV)
summary(lm_DTW3)

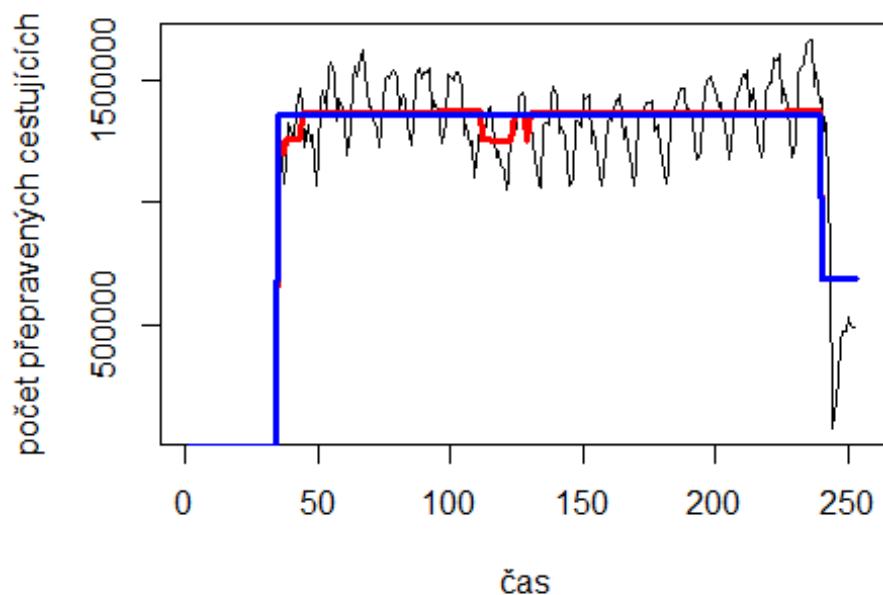
##
## Call:
## lm(formula = data$DTW_30 ~ data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -609431 -111768 2625 111007 739087
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1356659 12518 108.38 <2e-16 ***

```

```
## data$X2019_CV -670816      49511  -13.55  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 179200 on 217 degrees of freedom
## (37 observations deleted due to missingness)
## Multiple R-squared:  0.4583, Adjusted R-squared:  0.4558
## F-statistic: 183.6 on 1 and 217 DF,  p-value: < 2.2e-16

plot(data$DTW_30, type="l", xlab = "čas", ylab="počet přepravených cestujících"
, main="Letiště Detroit Metropolitan Wayne County")
fit <- c(rep(0, 34), lm_DTW1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 34), lm_DTW2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

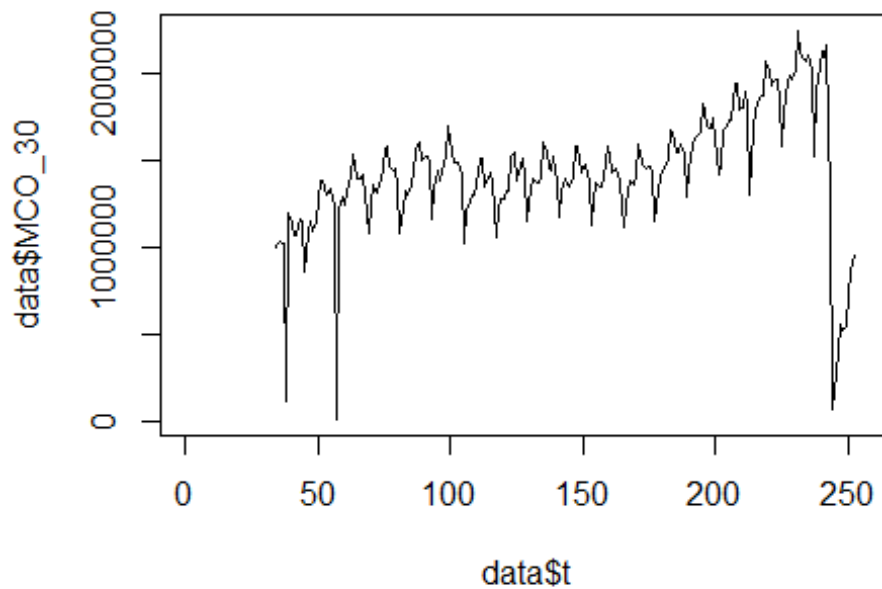
Letiště Detroit Metropolitan Wayne County



Letiště MCO

```
data$MCO_30 <- data$MCO/data$days * 30

plot(data$MCO_30~data$t, t="l")
```



```
lm_MCO1 <- glm(data$MCO_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR
S+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MCO1)

##
## Call:
## glm(formula = data$MCO_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1195786  -123271    12214    126840   1135065
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1016255.1    55407.8  18.341  <2e-16 ***
## data$t         3288.6       352.1    9.340  <2e-16 ***
## data$X2001_FC          NA          NA      NA      NA
## data$X2001_TER    12876.2   173892.4  0.074  0.9410
## data$X2003_SARS -188804.3  112679.5 -1.676  0.0953 .
## data$X2008_FC    63648.6   68521.3  0.929  0.3540
## data$X2009_SF   -75982.9   80174.9 -0.948  0.3444
## data$X2010_ER   126145.5  145346.6  0.868  0.3864
## data$X2019_CV  -788451.0   83853.4 -9.403  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 74733177913)
##
## Null deviance: 2.7081e+13 on 218 degrees of freedom
## Residual deviance: 1.5769e+13 on 211 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6114.5
##
## Number of Fisher Scoring iterations: 2

lm_MCO2 <- glm(data$MCO_30~data$t+data$X2019_CV)
summary(lm_MCO2)

##
## Call:
## glm(formula = data$MCO_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1177544  -119446    9005   134140  1135657
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   988369.1   47851.2   20.66 <2e-16 ***
## data$t         3457.8     322.6   10.72 <2e-16 ***
## data$X2019_CV -802102.6   83376.2   -9.62 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 7.4746e+10)
##
## Null deviance: 2.7081e+13 on 218 degrees of freedom
## Residual deviance: 1.6145e+13 on 216 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6109.7
##
## Number of Fisher Scoring iterations: 2

lm_MCO3 <- lm(data$MCO_30~data$t+data$X2019_CV)
summary(lm_MCO3)

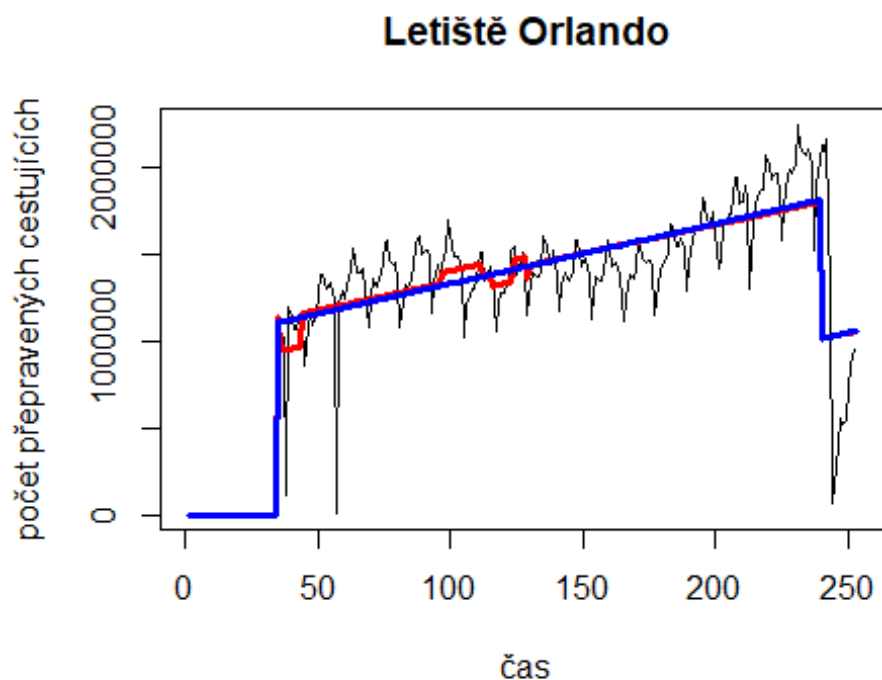
##
## Call:
## lm(formula = data$MCO_30 ~ data$t + data$X2019_CV)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1177544  -119446    9005   134140  1135657
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)

```



```
## (Intercept)    988369.1    47851.2    20.66    <2e-16 ***
## data$t         3457.8      322.6     10.72    <2e-16 ***
## data$X2019_CV -802102.6    83376.2    -9.62    <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 273400 on 216 degrees of freedom
## (37 observations deleted due to missingness)
## Multiple R-squared:  0.4038, Adjusted R-squared:  0.3983
## F-statistic: 73.16 on 2 and 216 DF,  p-value: < 2.2e-16

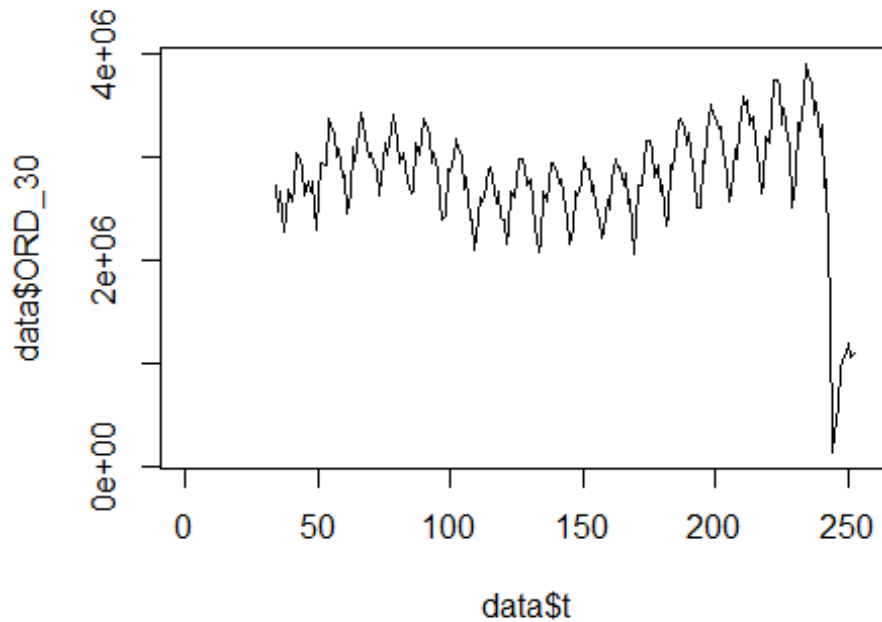
plot(data$MCO_30, type="l", xlab = "čas", ylab="počet přepravených cestujících"
, main="Letiště Orlando")
fit <- c(rep(0, 34), lm_MCO1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 34), lm_MCO2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Letiště ORD

```
data$ORD_30 <- data$ORD/data$days * 30

plot(data$ORD_30~data$t, t="l")
```



```
lm_ORD1 <- glm(data$ORD_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR
S+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ORD1)
```

```
##
## Call:
## glm(formula = data$ORD_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##      data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1354428  -255025    8364    261245   1819323
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2724655.0    86521.1  31.491 < 2e-16 ***
## data$t       1447.5       549.8    2.633  0.00909 **
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER   -52189.6    271538.8  -0.192  0.84777
## data$X2003_SARS -170998.2    175952.9  -0.972  0.33224
## data$X2008_FC   -159607.1    106998.3  -1.492  0.13728
## data$X2009_SF   -256737.4    125195.7  -2.051  0.04153 *
## data$X2010_ER    148276.8    226963.6  0.653  0.51427
## data$X2019_CV  -1588199.9    130939.9 -12.129 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 182228473209)
##
## Null deviance: 6.7781e+13 on 218 degrees of freedom
## Residual deviance: 3.8450e+13 on 211 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6309.7
##
## Number of Fisher Scoring iterations: 2

lm_ORD2 <- glm(data$ORD_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_ORD2)

##
## Call:
## glm(formula = data$ORD_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -1353917 -254771 6065 252140 1821198
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 2656798.4 76229.7 34.853 < 2e-16 ***
## data$t 1788.4 505.5 3.538 0.000494 ***
## data$X2009_SF -223896.3 105714.0 -2.118 0.035328 *
## data$X2019_CV -1604029.5 130223.5 -12.318 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 182122858149)
##
## Null deviance: 6.7781e+13 on 218 degrees of freedom
## Residual deviance: 3.9156e+13 on 215 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6305.7
##
## Number of Fisher Scoring iterations: 2

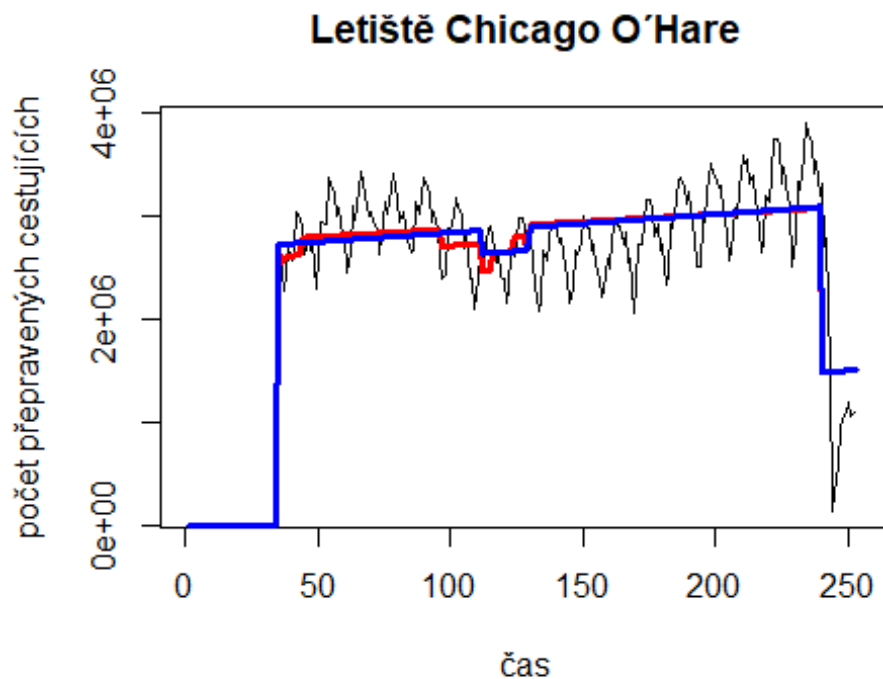
lm_ORD3 <- lm(data$ORD_30~data$t+data$X2009_SF+data$X2019_CV)
summary(lm_ORD3)

##
## Call:
## lm(formula = data$ORD_30 ~ data$t + data$X2009_SF + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -1353917 -254771 6065 252140 1821198
##
## Coefficients:

```

```
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept) 2656798.4   76229.7  34.853 < 2e-16 ***
## data$t      1788.4      505.5   3.538 0.000494 ***
## data$X2009_SF -223896.3  105714.0  -2.118 0.035328 *
## data$X2019_CV -1604029.5  130223.5 -12.318 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 426800 on 215 degrees of freedom
## (37 observations deleted due to missingness)
## Multiple R-squared:  0.4223, Adjusted R-squared:  0.4143
## F-statistic: 52.39 on 3 and 215 DF,  p-value: < 2.2e-16

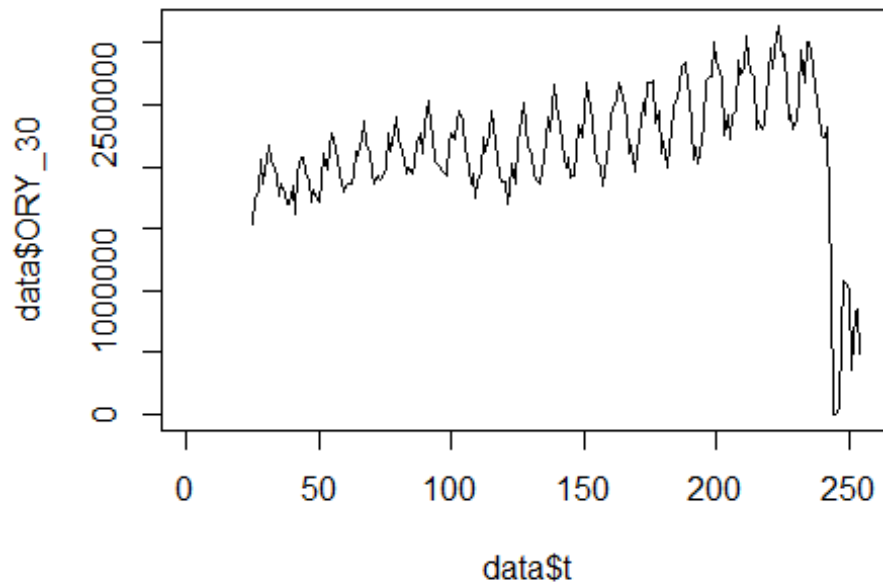
plot(data$ORD_30, type="l", xlab = "čas", ylab="počet přepravených cestujících"
, main="Letiště Chicago O'Hare")
fit <- c(rep(0, 34), lm_ORD1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 34), lm_ORD2$fitted.values)
lines(fit2, col="blue", lwd=3)
```



Letiště ORY

```
data$ORY_30 <- data$ORY/data$days * 30
```

```
plot(data$ORY_30~data$t, t="l")
```



```
lm_ORY1 <- glm(data$ORY_30~data$t+data$X2001_FC+data$X2001_TER+data$X2008_FC+
data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ORY1)

##
## Call:
## glm(formula = data$ORY_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##      data$X2008_FC + data$X2009_SF + data$X2010_ER + data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1024501  -185315   -5667    186052   1306590
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1719139.4   59483.3   28.901  <2e-16 ***
## data$t       4047.9      383.7    10.550  <2e-16 ***
## data$X2001_FC      NA           NA         NA      NA
## data$X2001_TER    58933.0  102543.2    0.575    0.566
## data$X2008_FC   -18135.0   77821.9   -0.233    0.816
## data$X2009_SF  -115530.3   91383.9   -1.264    0.207
## data$X2010_ER    63242.2  165910.9    0.381    0.703
## data$X2019_CV -1686363.9   90891.9  -18.554  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 97384470501)
```

```

##
## Null deviance: 5.6979e+13 on 229 degrees of freedom
## Residual deviance: 2.1717e+13 on 223 degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 6481
##
## Number of Fisher Scoring iterations: 2

lm_ORY2 <- glm(data$ORY_30~data$t+data$X2019_CV)
summary(lm_ORY2)

##
## Call:
## glm(formula = data$ORY_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -1024573 -191356 -4700 188700 1306373
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1718935.0 49992.9 34.38 <2e-16 ***
## data$t 3999.6 344.1 11.62 <2e-16 ***
## data$X2019_CV -1674273.2 89796.1 -18.64 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 96729253805)
##
## Null deviance: 5.6979e+13 on 229 degrees of freedom
## Residual deviance: 2.1958e+13 on 227 degrees of freedom
## (26 observations deleted due to missingness)
## AIC: 6475.6
##
## Number of Fisher Scoring iterations: 2

lm_ORY3 <- lm(data$ORY_30~data$t+data$X2019_CV)
summary(lm_ORY3)

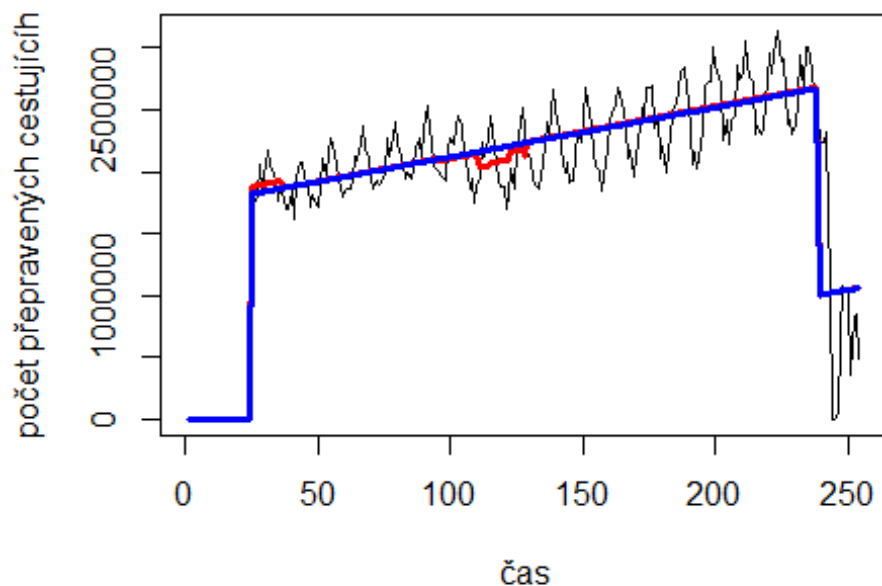
##
## Call:
## lm(formula = data$ORY_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -1024573 -191356 -4700 188700 1306373
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1718935.0 49992.9 34.38 <2e-16 ***
## data$t 3999.6 344.1 11.62 <2e-16 ***

```

```
## data$X2019_CV -1674273.2    89796.1  -18.64  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 311000 on 227 degrees of freedom
## (26 observations deleted due to missingness)
## Multiple R-squared:  0.6146, Adjusted R-squared:  0.6112
## F-statistic:   181 on 2 and 227 DF,  p-value: < 2.2e-16

plot(data$ORY_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="Letiště Paříž Orly")
fit <- c(rep(0, 24), lm_ORY1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 24), lm_ORY2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

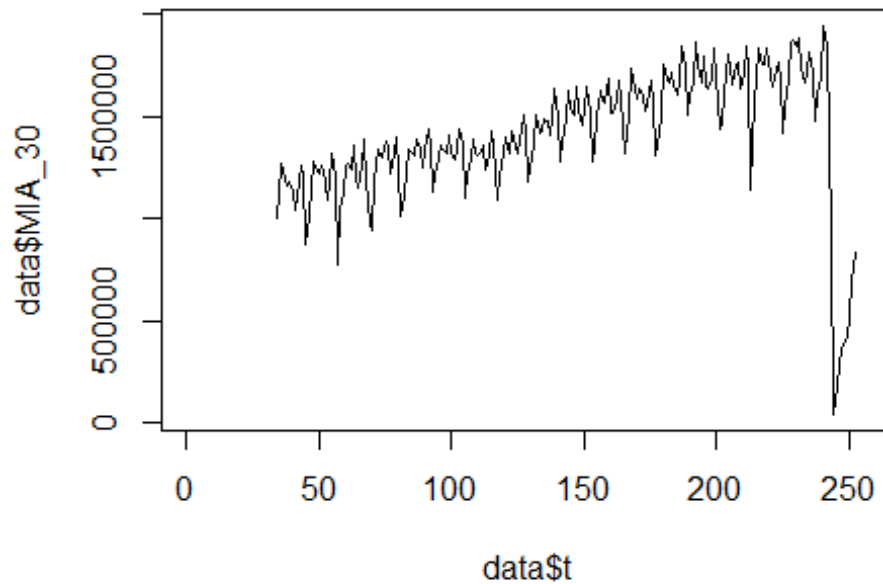
Letiště Paříž Orly



Letiště MIA

```
data$MIA_30 <- data$MIA/data$days * 30
```

```
plot(data$MIA_30~data$t, t="l")
```



```
lm_MIA1 <- glm(data$MIA_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR
S+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_MIA1)

##
## Call:
## glm(formula = data$MIA_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -806001  -53376   24976   72679  1108179
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1008233.6   42661.9   23.633 <2e-16 ***
## data$t       3238.9     271.1   11.948 <2e-16 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER   -3695.7  133890.5  -0.028  0.978
## data$X2003_SARS  20874.7   86758.9  0.241  0.810
## data$X2008_FC   -13567.3   52758.8  -0.257  0.797
## data$X2009_SF   -67685.8   61731.6  -1.096  0.274
## data$X2010_ER    52898.2  111911.3  0.473  0.637
## data$X2019_CV  -948479.3   64563.9 -14.691 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



```

##
## (Dispersion parameter for gaussian family taken to be 44304885795)
##
## Null deviance: 2.1558e+13 on 218 degrees of freedom
## Residual deviance: 9.3483e+12 on 211 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6000
##
## Number of Fisher Scoring iterations: 2

lm_MIA2 <- glm(data$MIA_30~data$t+data$X2019_CV)
summary(lm_MIA2)

##
## Call:
## glm(formula = data$MIA_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -805980 -55767 20433 75077 1108256
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1001185.8 36545.9 27.39 <2e-16 ***
## data$t 3252.9 246.4 13.20 <2e-16 ***
## data$X2019_CV -944857.5 63677.9 -14.84 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 43599386924)
##
## Null deviance: 2.1558e+13 on 218 degrees of freedom
## Residual deviance: 9.4175e+12 on 216 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 5991.6
##
## Number of Fisher Scoring iterations: 2

lm_MIA3 <- lm(data$MIA_30~data$t+data$X2019_CV)
summary(lm_MIA3)

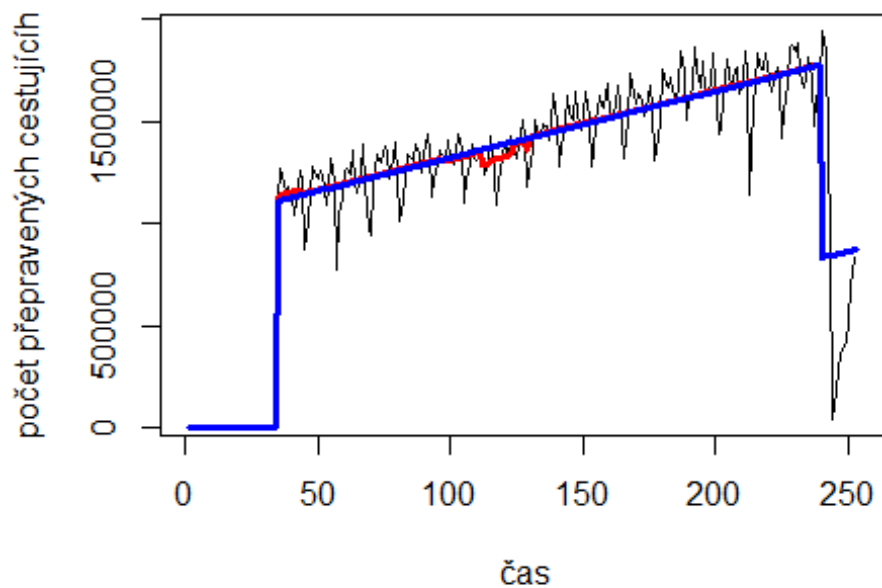
##
## Call:
## lm(formula = data$MIA_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -805980 -55767 20433 75077 1108256
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)

```

```
## (Intercept) 1001185.8 36545.9 27.39 <2e-16 ***
## data$t      3252.9    246.4  13.20 <2e-16 ***
## data$X2019_CV -944857.5 63677.9 -14.84 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 208800 on 216 degrees of freedom
## (37 observations deleted due to missingness)
## Multiple R-squared:  0.5631, Adjusted R-squared:  0.5591
## F-statistic: 139.2 on 2 and 216 DF,  p-value: < 2.2e-16
```

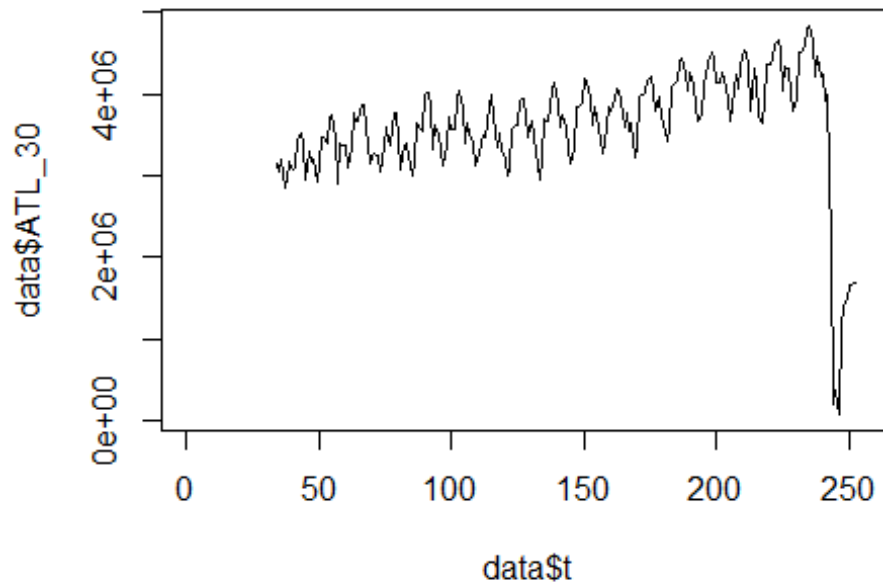
```
plot(data$MIA_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="Letiště Miami")
fit <- c(rep(0, 34), lm_MIA1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 34), lm_MIA2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

Letiště Miami



Letiště ATL

```
data$ATL_30 <- data$ATL/data$days * 30
plot(data$ATL_30~data$t, t="l")
```



```
lm_ATL1 <- glm(data$ATL_30~data$t+data$X2001_FC+data$X2001_TER+data$X2003_SAR
S+data$X2008_FC+data$X2009_SF+data$X2010_ER+data$X2019_CV)
summary(lm_ATL1)
```

```
##
## Call:
## glm(formula = data$ATL_30 ~ data$t + data$X2001_FC + data$X2001_TER +
##     data$X2003_SARS + data$X2008_FC + data$X2009_SF + data$X2010_ER +
##     data$X2019_CV)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1938163  -215704    29288   202941  2261647
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2999414.0    94478.3  31.747  <2e-16 ***
## data$t       5409.6       600.4   9.011  <2e-16 ***
## data$X2001_FC      NA           NA      NA      NA
## data$X2001_TER    9869.6   296511.7  0.033  0.973
## data$X2003_SARS -101933.6  192134.9 -0.531  0.596
## data$X2008_FC   -16676.8  116838.8 -0.143  0.887
## data$X2009_SF  -160147.7  136709.8 -1.171  0.243
## data$X2010_ER   216625.4  247837.0  0.874  0.383
## data$X2019_CV -2317942.8  142982.2 -16.211 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```

##
## (Dispersion parameter for gaussian family taken to be 217288202161)
##
## Null deviance: 1.0698e+14 on 218 degrees of freedom
## Residual deviance: 4.5848e+13 on 211 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6348.2
##
## Number of Fisher Scoring iterations: 2

lm_ATL2 <- glm(data$ATL_30~data$t+data$X2019_CV)
summary(lm_ATL2)

##
## Call:
## glm(formula = data$ATL_30 ~ data$t + data$X2019_CV)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -1938248 -214291 17786 211873 2262581
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 2962154 80982 36.58 <2e-16 ***
## data$t 5580 546 10.22 <2e-16 ***
## data$X2019_CV -2322386 141103 -16.46 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 214080580389)
##
## Null deviance: 1.0698e+14 on 218 degrees of freedom
## Residual deviance: 4.6241e+13 on 216 degrees of freedom
## (37 observations deleted due to missingness)
## AIC: 6340.1
##
## Number of Fisher Scoring iterations: 2

lm_ATL3 <- lm(data$ATL_30~data$t+data$X2019_CV)
summary(lm_ATL3)

##
## Call:
## lm(formula = data$ATL_30 ~ data$t + data$X2019_CV)
##
## Residuals:
## Min 1Q Median 3Q Max
## -1938248 -214291 17786 211873 2262581
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)

```

```
## (Intercept)    2962154      80982   36.58 <2e-16 ***
## data$t         5580         546   10.22 <2e-16 ***
## data$X2019_CV -2322386    141103  -16.46 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 462700 on 216 degrees of freedom
## (37 observations deleted due to missingness)
## Multiple R-squared:  0.5678, Adjusted R-squared:  0.5638
## F-statistic: 141.9 on 2 and 216 DF,  p-value: < 2.2e-16

plot(data$ATL_30, type="l", xlab="čas", ylab="počet přepravených cestujících", main="Letiště Atlanta")
fit <- c(rep(0, 34), lm_ATL1$fitted.values)
lines(fit, col="red", lwd=3)
fit2 <- c(rep(0, 34), lm_ATL2$fitted.values)
lines(fit2, col="blue", lwd=3)
```

Letiště Atlanta

