

Příloha 3 – Zdrojový kód makra pro výpočet *PMV*, *PPD*, *t_o* a *DR*

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Function PMVx(CLO, MET, WME, Ta, RH, VEL, Tr, PA)
If PA = "0" Then
    PA = RH * 10 * Exp(16.6536 - (4030.183 / (Ta + 235)))
End If
ICL = 0.155 * CLO
M = MET * 58.15
W = WME * 58.15
MW = M - W
If ICL <= 0.078 Then
    FCL = 1 + 1.29 * ICL
Else
    FCL = 1.05 + 0.645 * ICL
End If
HCF = 12.1 * Sqr(VEL)
TAA = Ta + 273
TRA = Tr + 273
'TCLA = TAA + (35.5 - TA) / (3.5 * ICL + 1) 'odhad povrchove teploty odevu
TCLA = TAA + (35.5 - Ta) / (3.5 * (6.45 * ICL + 0.1)) 'odhad povrchove teploty odevu
P1 = ICL * FCL
P2 = P1 * 3.96
P3 = P1 * 100
P4 = P1 * TAA
P5 = 308.7 - 0.028 * MW + P2 * (TRA / 100) ^ 4
XN = TLCA / 100
XF = XN
MAXITER = 1500
EPS = 0.000015
For N = 1 To MAXITER
    XF = (XF + XN) / 2
    HCN = 2.38 * Abs(100 * XF - TAA) ^ 0.25
    If HCF > HCN Then
        HC = HCF
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Else
  HC = HCN
End If
XN = (P5 + P4 * HC - P2 * XF ^ 4) / (100 + P3 * HC)
If Abs(XN - XF) < EPS Then
  Exit For
End If
If N = MAXITER Then
  MsgBox "NEDOSTATEK ITERACI!"
End If
Next N
TCL = 100 * XN - 273
HL1 = 3.05 * 0.001 * (5733 - 6.99 * MW - PA)
If MW > 58.15 Then
  HL2 = 0.42 * (MW - 58.15)
Else
  HL2 = 0
End If
HL3 = 1.7 * 0.00001 * M * (5867 - PA)
HL4 = 0.0014 * M * (34 - Ta)
HL5 = 3.96 * FCL * (XN ^ 4 - (TRA / 100) ^ 4)
HL6 = FCL * HC * (TCL - Ta)
TS = 0.303 * Exp(-0.036 * M) + 0.028
PMVx = TS * (MW - HL1 - HL2 - HL3 - HL4 - HL5 - HL6)
End Function

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Function PPD(PMVx)
PPD = 100 - 95 * Exp(-0.03353 * PMVx ^ 4 - 0.2179 * PMVx ^ 2)
End Function

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Function TOPERA(Ta, Tr, v)
A = 0.73 * v ^ 0.2
If v < 0.2 Then TOPERA = (Ta + Tr) / 2 Else TOPERA = A * Ta + (1 - A) * Tr
End Function

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Function DR(v, Tu, Ta)
DR = (34 - Ta) * (v - 0.05) ^ 0.62 * (0.37 * v * Tu + 3.14)
End Function

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