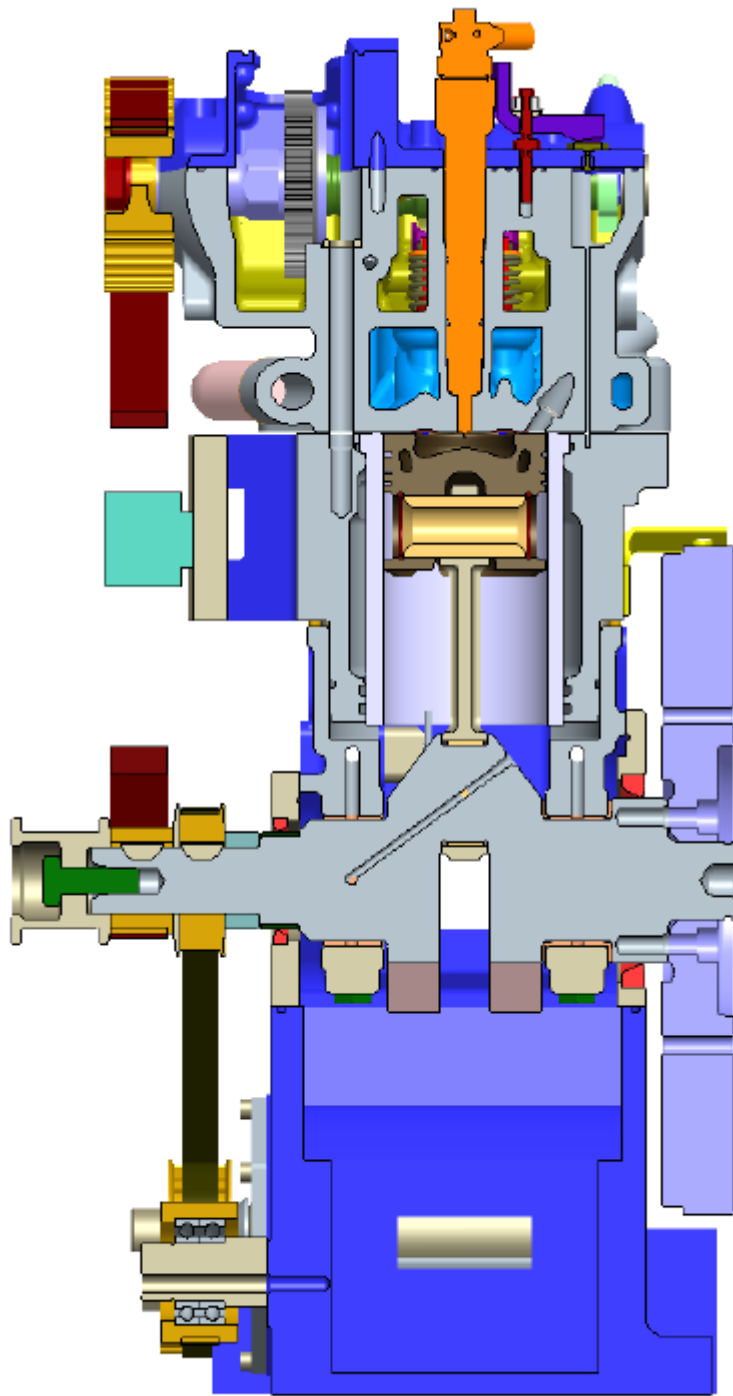


Přílohy diplomové práce

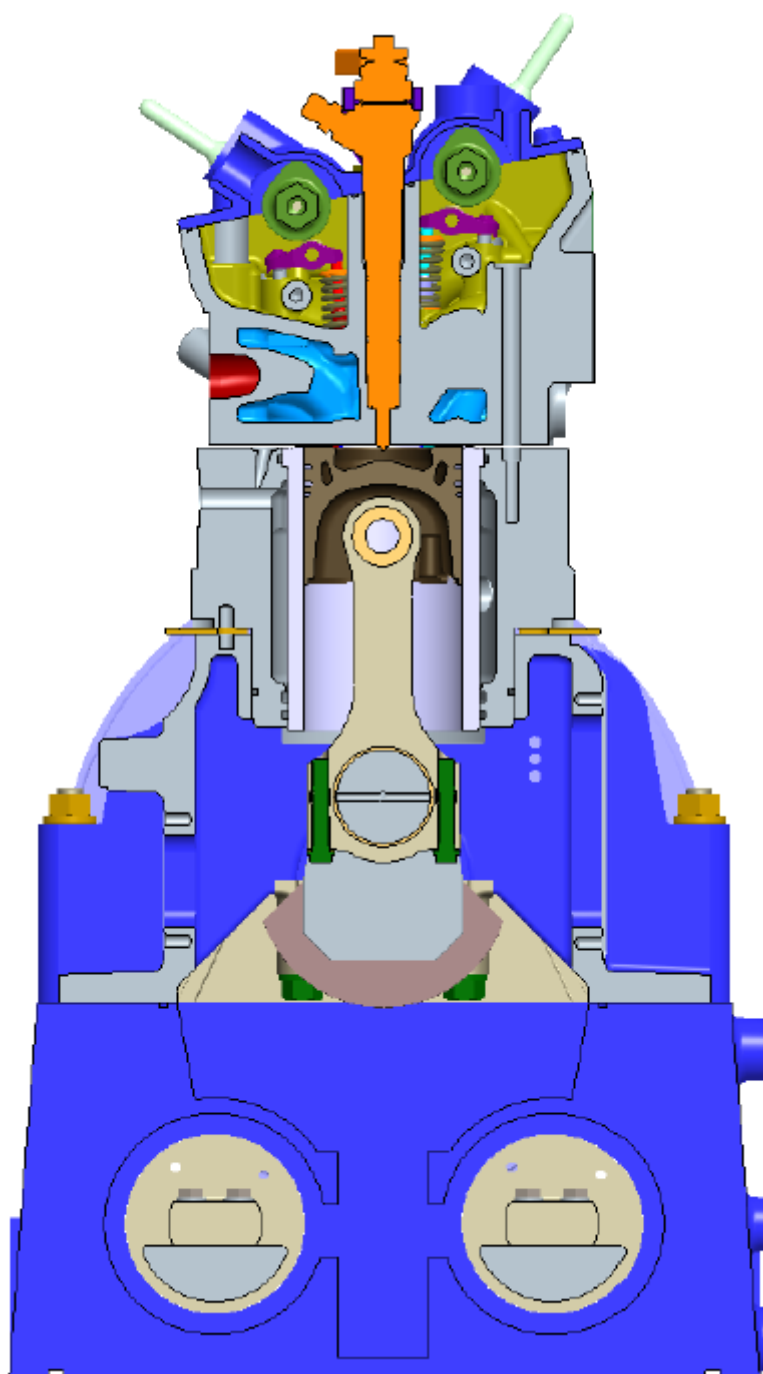
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A Obrázky motoru AVL Research Engine 5402

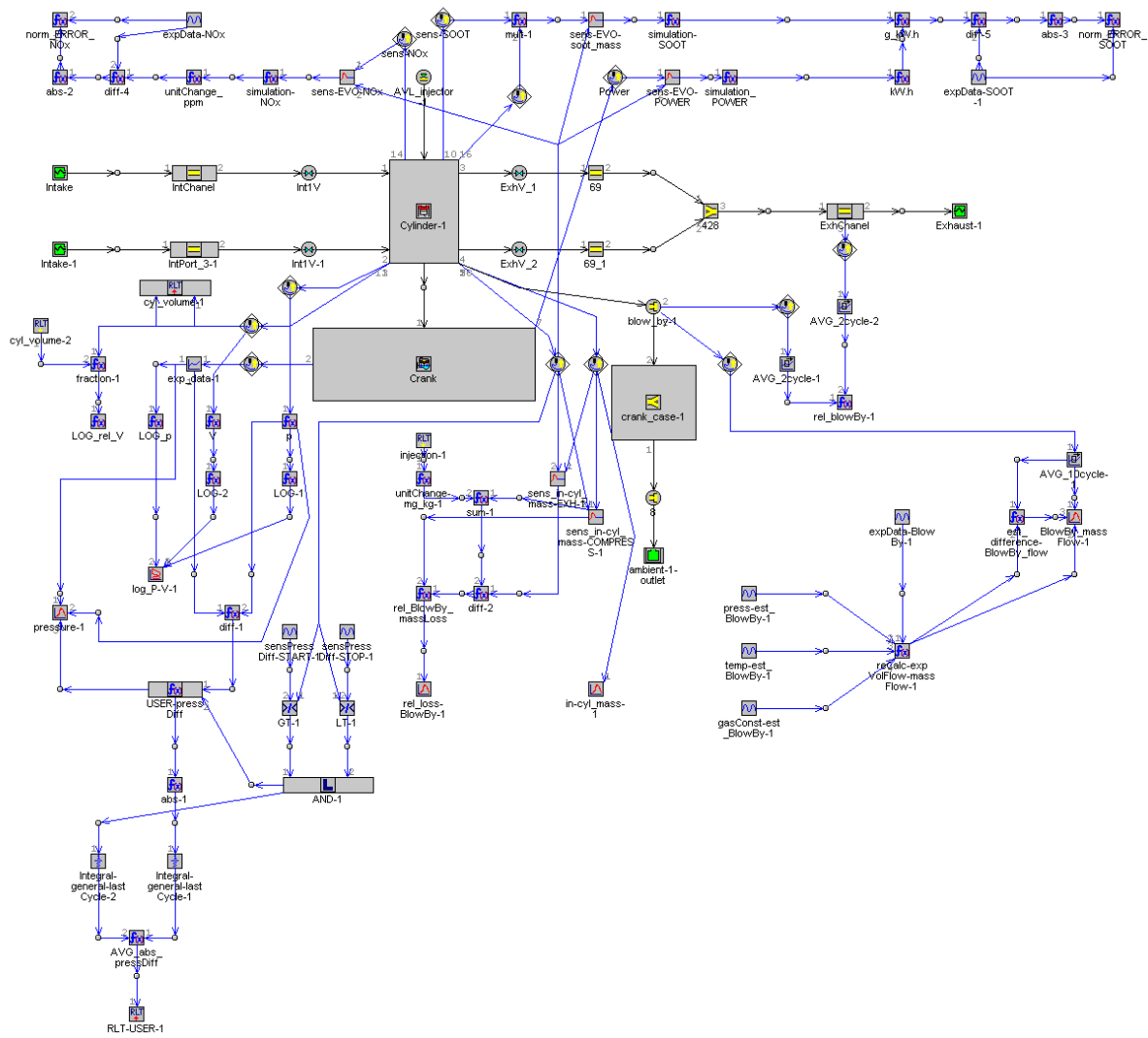


Obr. A.1: Podélný řez motoru AVL Research Engine 5402. Převzato z [3].

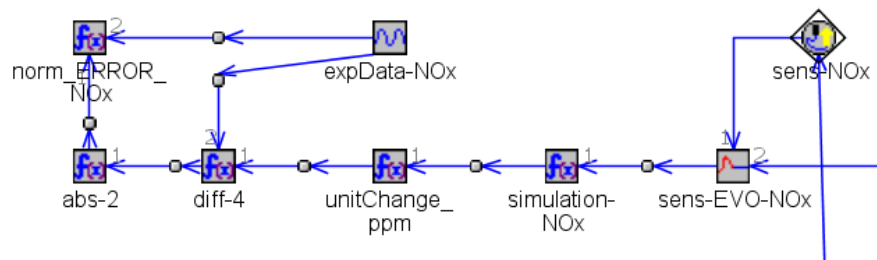


Obr. A.2: Příčný řez motoru AVL Research Engine 5402. Převzato z [3].

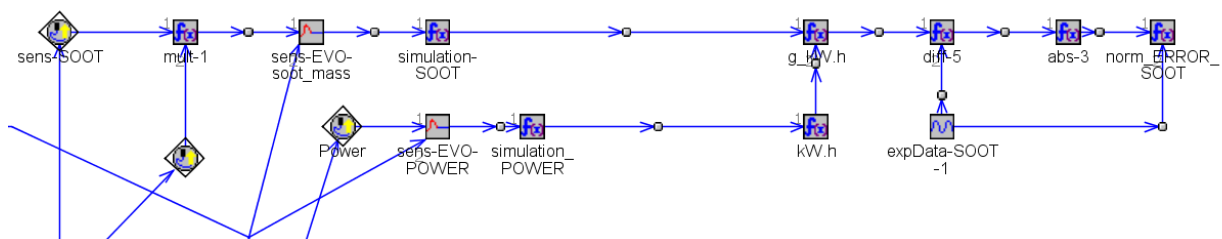
B Model v prostředí GT-Power 7.3



Obr. B.1: Finální model v prostředí GT-Power 7.3.

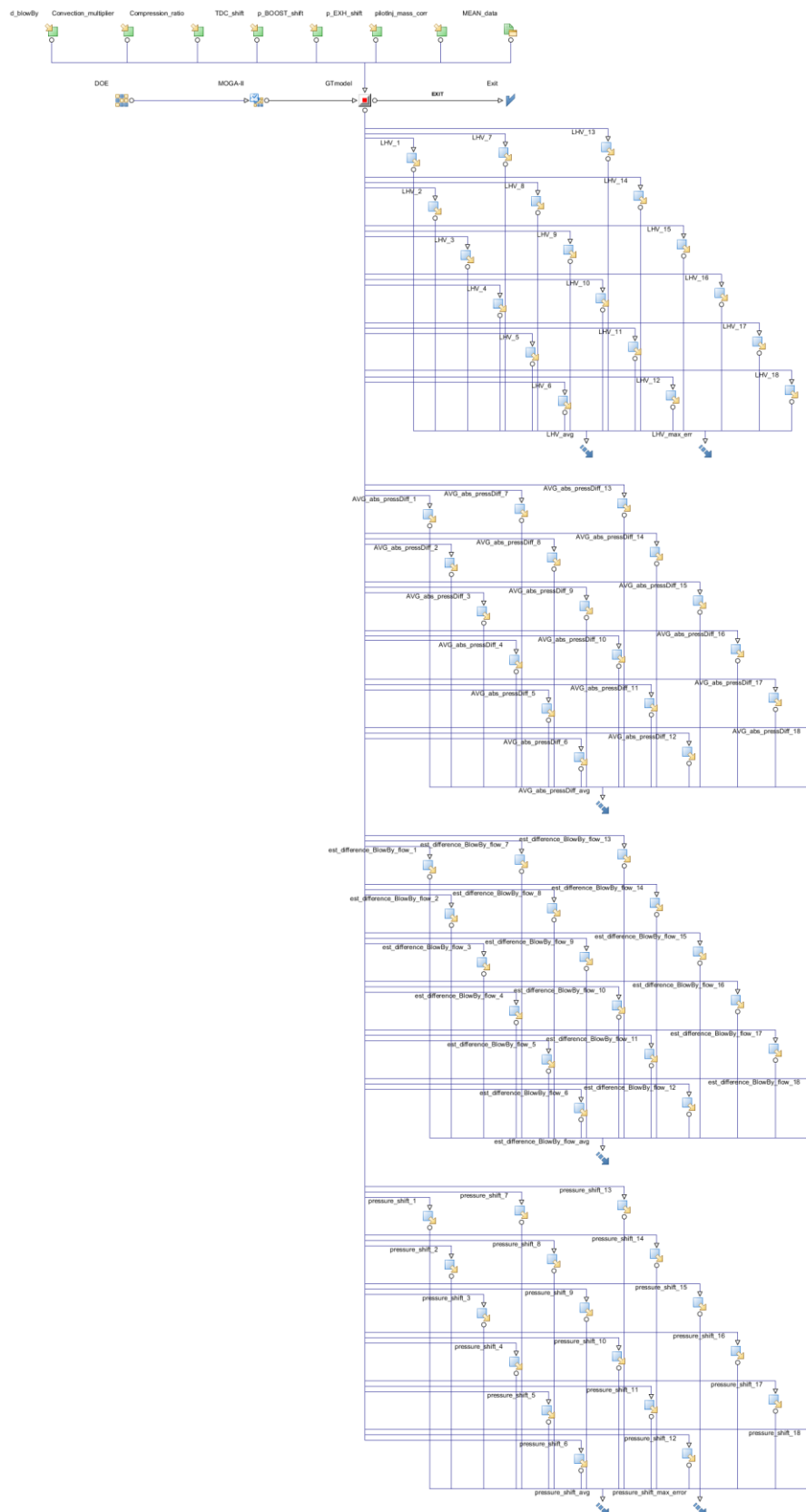


Obr. B.2: Detail výpočtu chyby predikce oxidů dusíku.

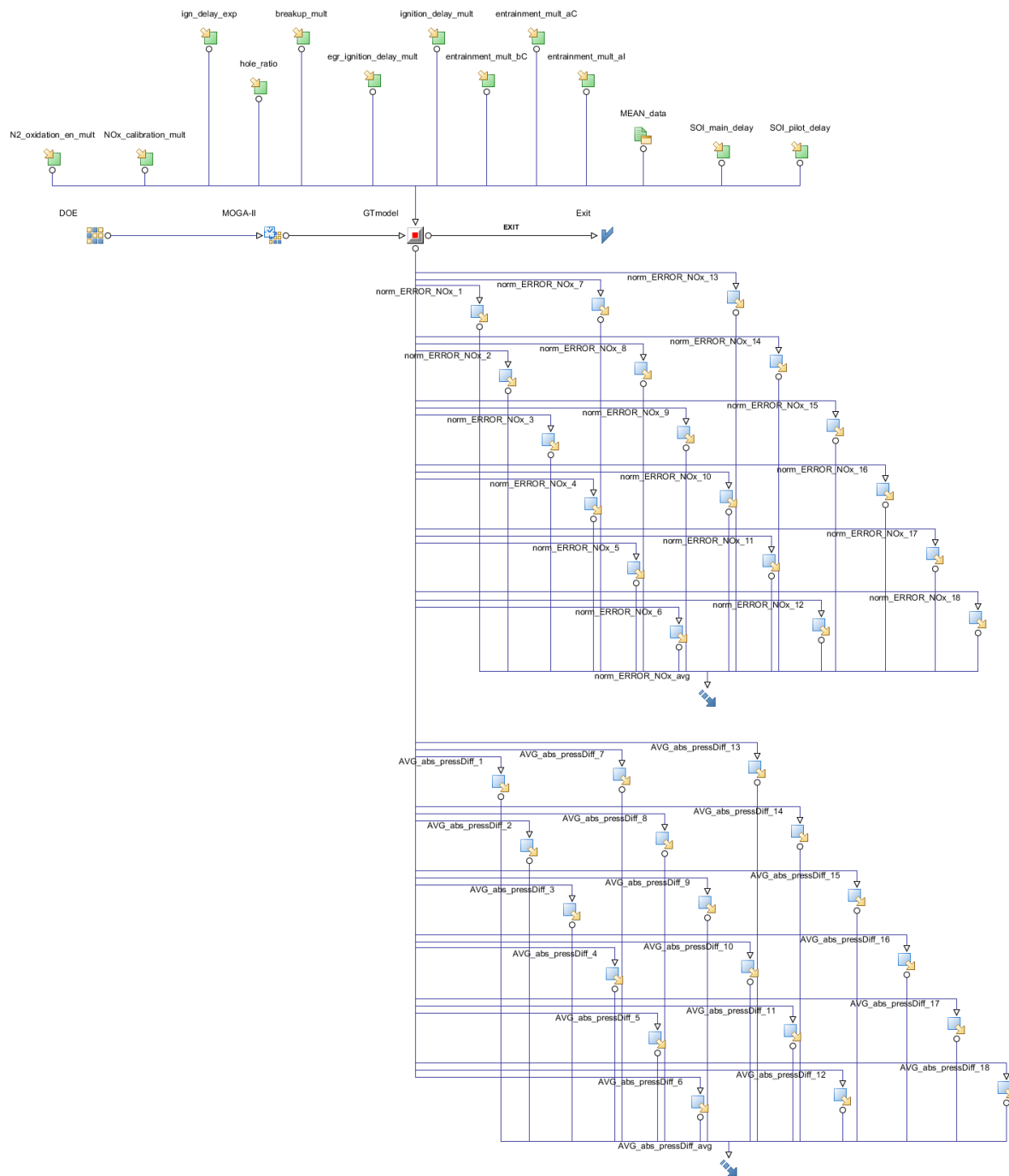


Obr. B.3: Detail výpočtu chyby predikce množství sazí.

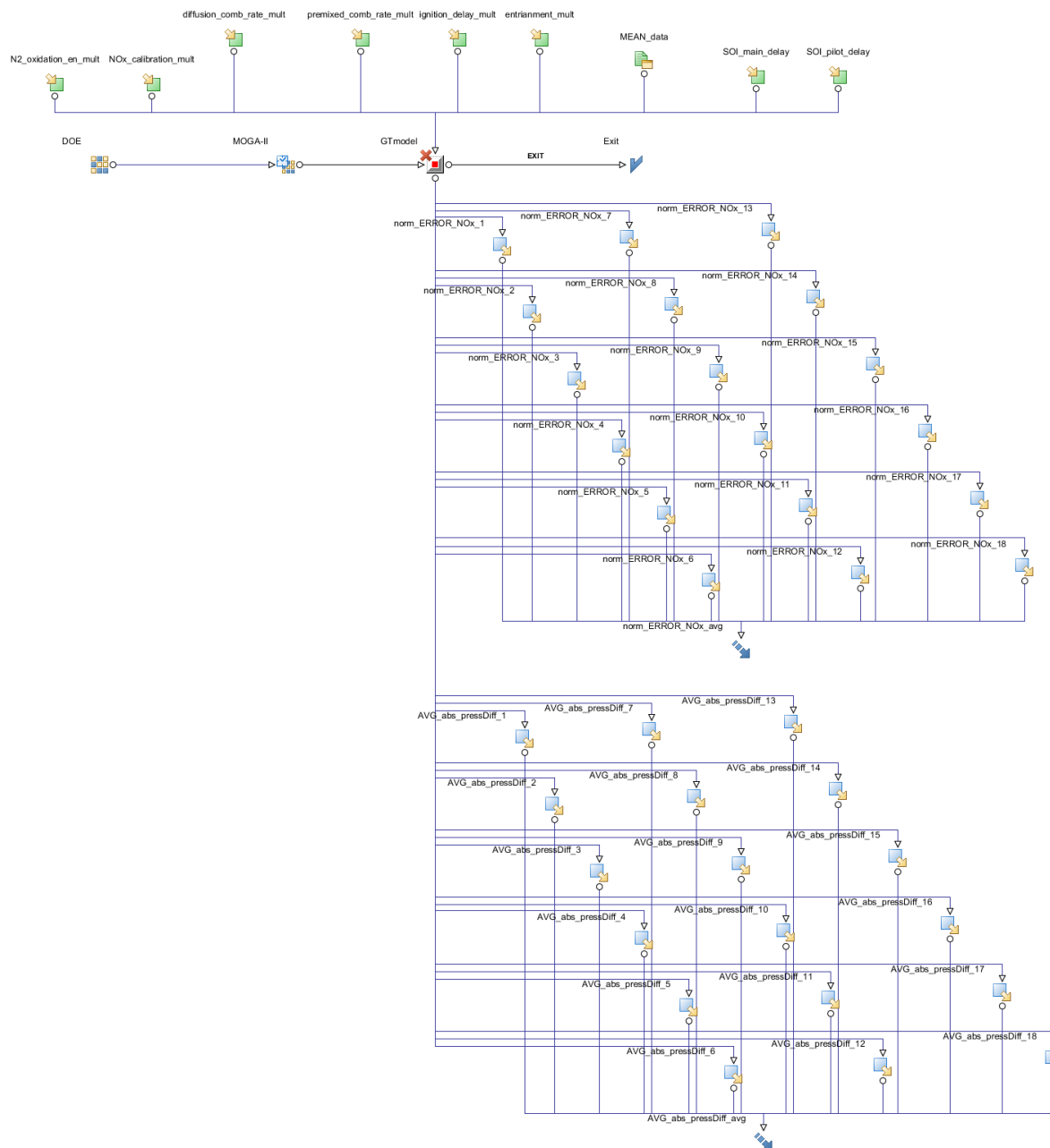
C Model v prostředí modeFRONTIER 4.5.2



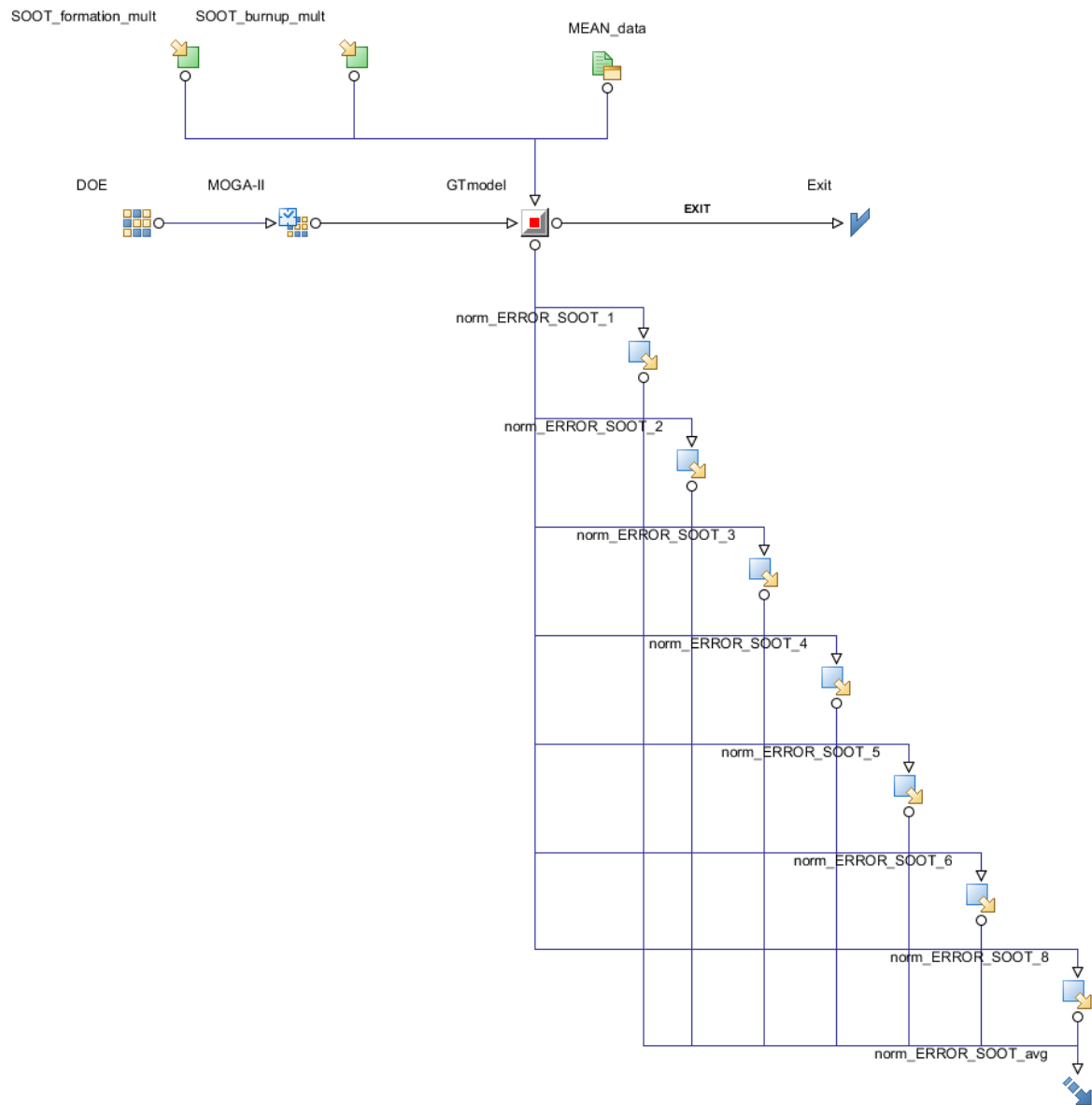
Obr. C.1: Model v prostředí modeFRONTIER pro kalibraci dle třítlakové analýzy (18 bodů).



Obr. C.2: Model v prostředí modeFRONTIER pro kalibraci prediktivního modelu DI Jet včetně modelu NO_x (18 bodů).



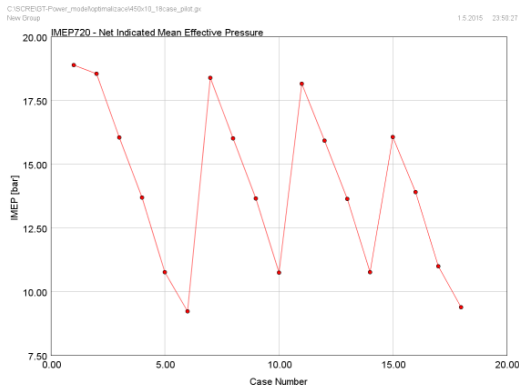
Obr. C.3: Model v prostředí modeFRONTIER pro kalibraci prediktivního modelu DI Pulse včetně modelu NO_x (18 bodů).



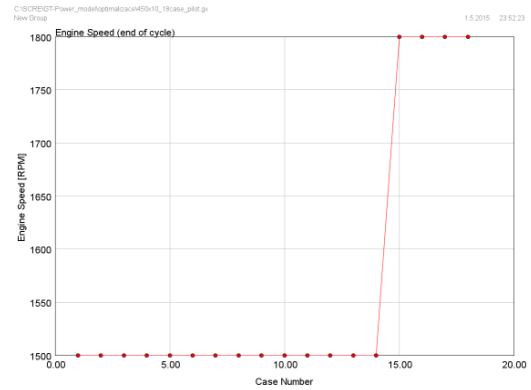
Obr. C.4: Model v prostředí modeFRONTIER pro kalibraci modelu predikce množství sazí.

D Parametry v měřených bodech

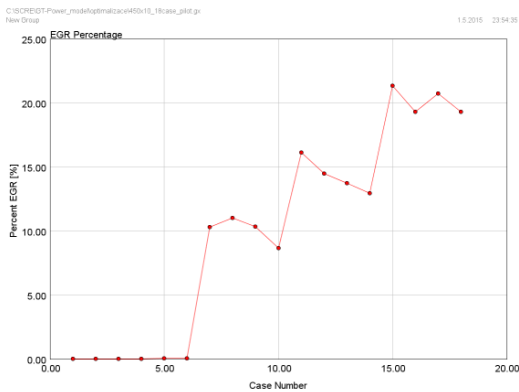
D.1 18 bodů, 1500-1800 rpm, 0-20% EGR, přeplňováno



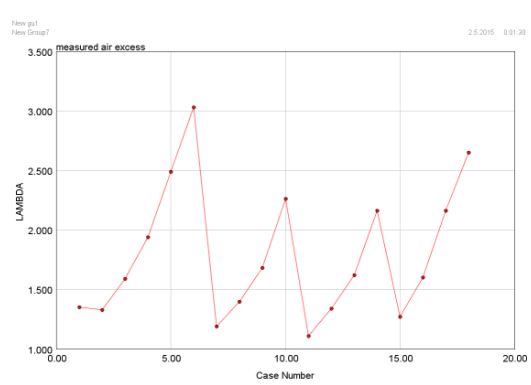
a: Střední indikovaný efektivní tlak.



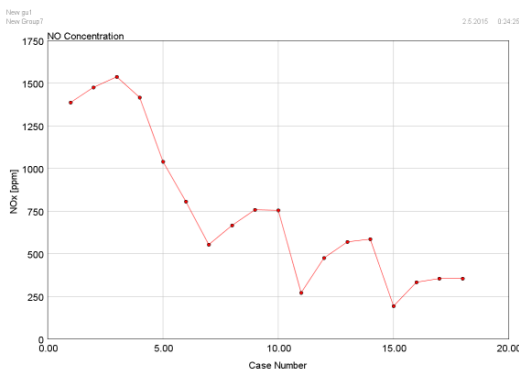
b: Otáčky motoru.



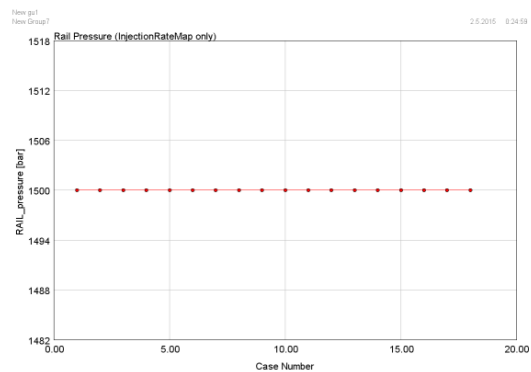
c: Podíl recirkulovaných spalin.



d: Lambda.

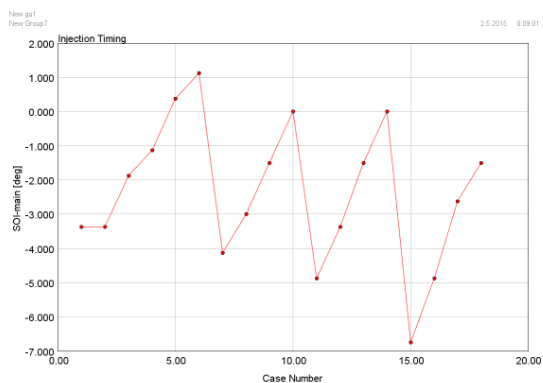


e: Množství oxidů dusíku ve spalinách.

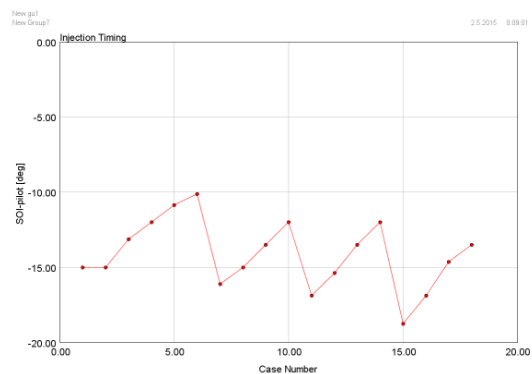


f: Tlak v railu.

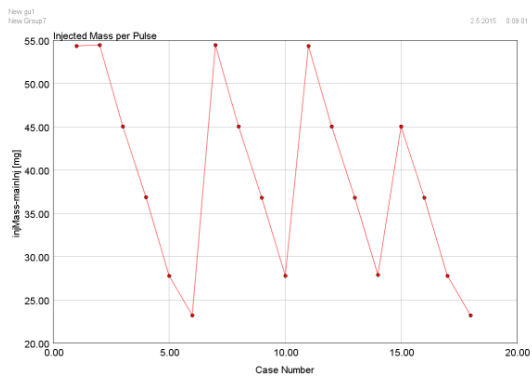
Obr. D.1.1: Provozní parametry motoru v přeplňovaném režimu.



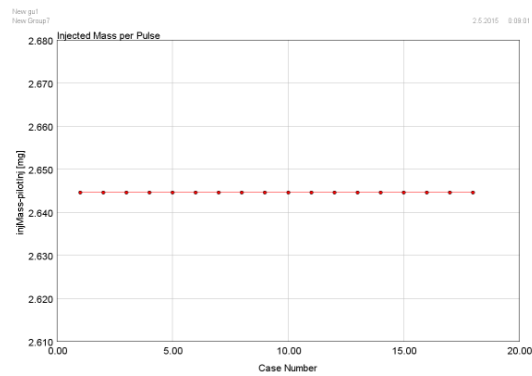
g: Počátek hlavního vstříku.



h: Počátek pilotního vstříku.



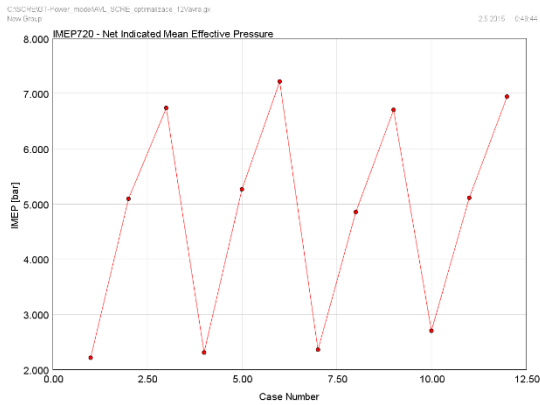
i: Velikost hlavního vstříku na cyklus.



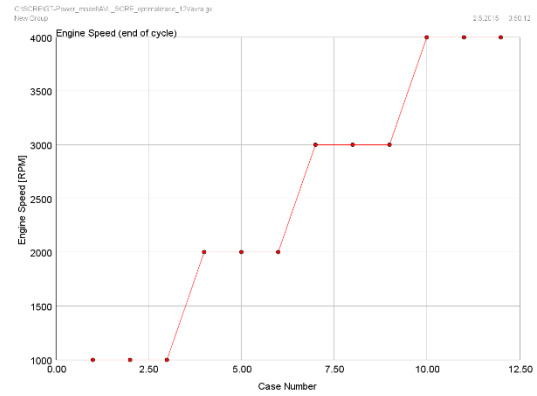
j: Velikost pilotního vstříku na cyklus.

Obr. D.1.2: Nastavení vstřikování pro přepřňovaný režim.

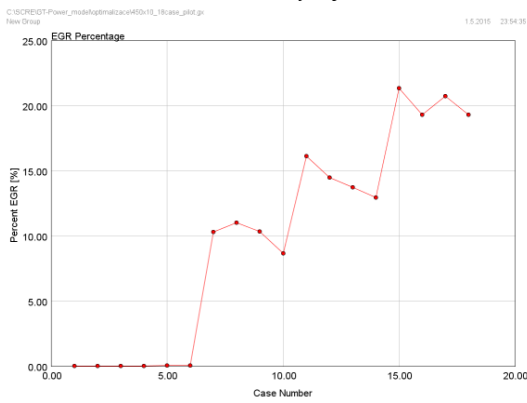
D.2 12 bodů, 1000-4000 rpm, 0% EGR, atmosférický režim



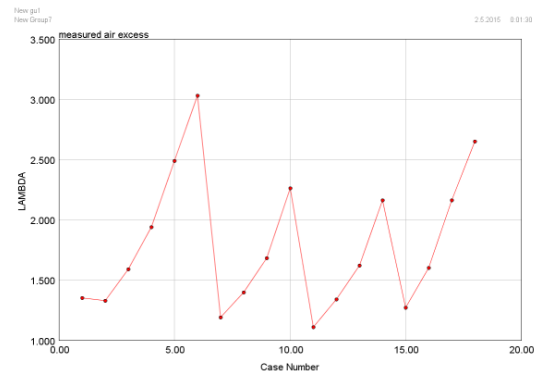
a: Střední indikovaný efektivní tlak.



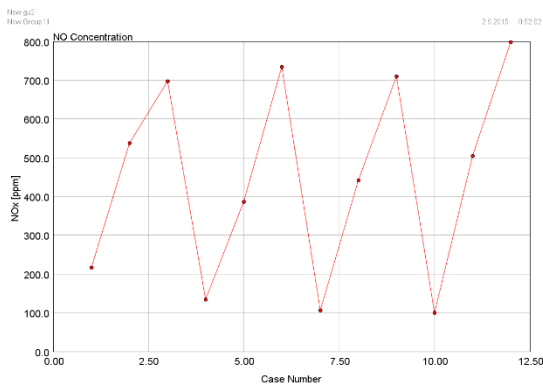
b: Otáčky motoru.



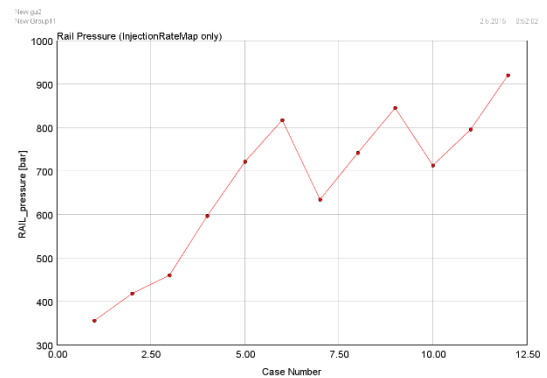
c: Podíl recirkulovaných spalin.



d: Lambda.

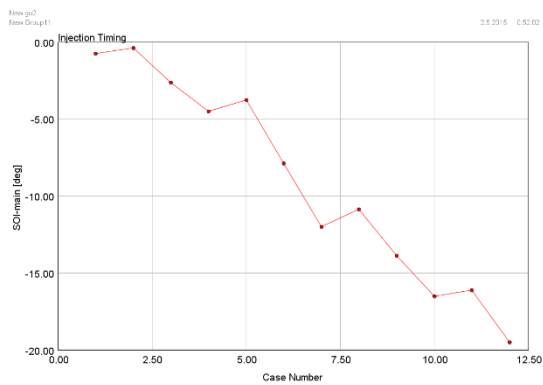


e: Množství oxidů dusíku ve spalinách.

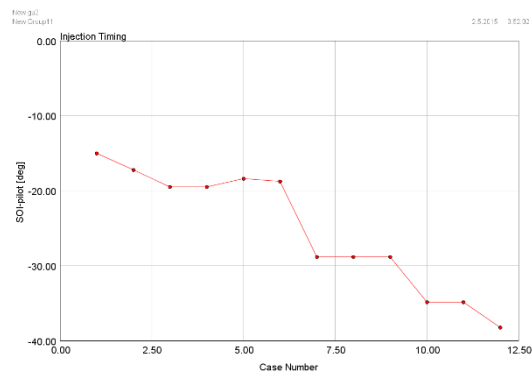


f: Tlak v railu.

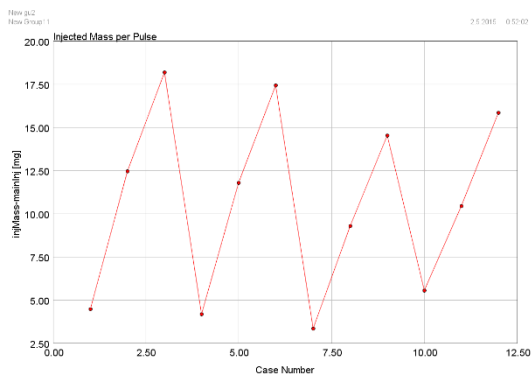
Obr. D.2.1: Provozní parametry motoru v atmosférickém režimu.



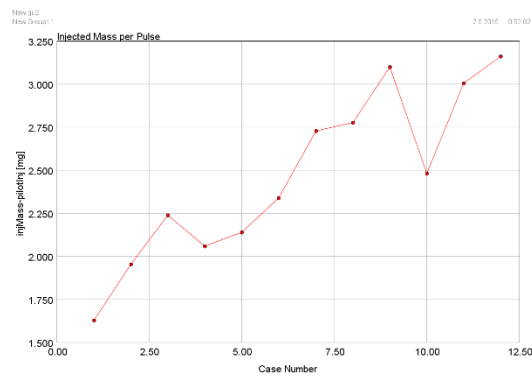
g: Počátek hlavního vstřiku.



h: Počátek pilotního vstřiku



i: Velikost hlavního vstřiku na cyklus.



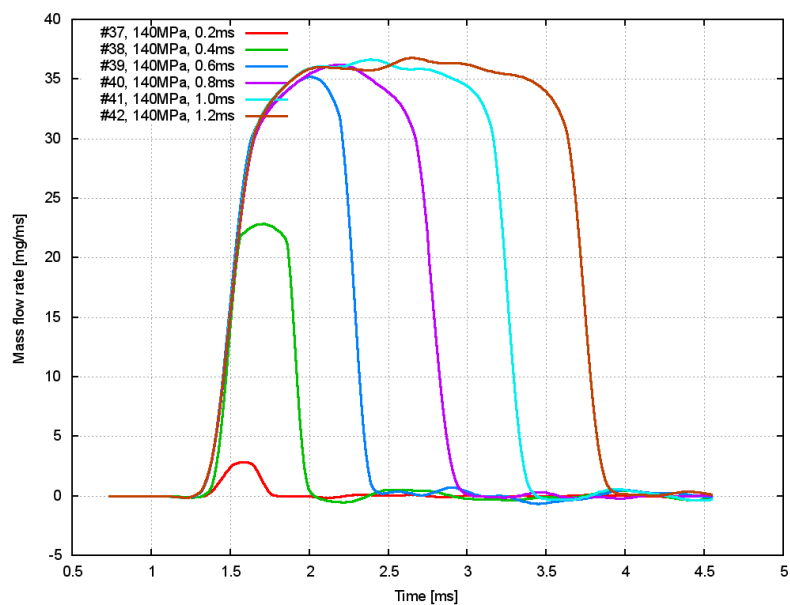
j: Velikost pilotního vstřiku na cyklus.

Obr. D.2.2: Nastavení vstřikování pro atmosférický režim.

E Data ze vstřikovací stolice

user pressure:	92	MPa	OK						mg	
user ener. time:	0,2619	ms	OK							
									0,2	0,4
				col.:	1		80		0,1006	6,32499
				row:	4		100		0,22392	7,55966
							92		0,17459	7,06579
user value:	2,30742	mg								
				min		max				
					0,2		1,2			
					1	0	0	0	0	0
					0,2	0,4	0,6	0,8	1	1,2
min	max		energizer time:	ms	ms	ms	ms	ms	ms	ms
30	180									
		rail pressure:							unit: mg	
	0	30	MPa		0,21969	1,56954	5,19792	10,37499	16,09142	21,61887
	0	40	MPa		0,85763	2,92399	8,35138	15,07783	22,27878	29,68072
	0	60	MPa		0,32896	4,77867	13,47161	23,18471	32,89831	43,11464
	1	80	MPa		0,10060	6,32499	17,19465	29,10879	41,48035	53,94258
	0	100	MPa		0,22392	7,55966	20,40837	33,90544	48,32310	62,73930
	0	120	MPa		0,39558	8,71627	23,42666	38,92895	55,07090	71,03193
	0	140	MPa		0,71734	9,87544	26,26175	43,46605	61,14695	78,43622
	0	160	MPa		0,76642	11,29966	29,42530	47,93743	66,74736	85,41185
	0	180	MPa		0,84719	12,31894	32,23294	51,94032	72,04785	91,45193

Obr. E.1: Lineární interpolace použitá pro výpočet vstříknuté dávky paliva na základě měření charakteristiky vstřikovače. Uživatel mění hodnotu „user pressure“ a „user ener. time“, v poli „user value“ je pak vypočtená velikost dávky na cyklus.

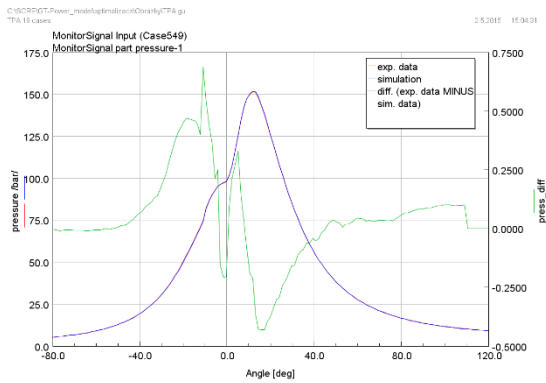


Obr. E.2: Příklad tvaru zákona vstřiku pro 140 MPa a různé aktivační časy vstřikovače.

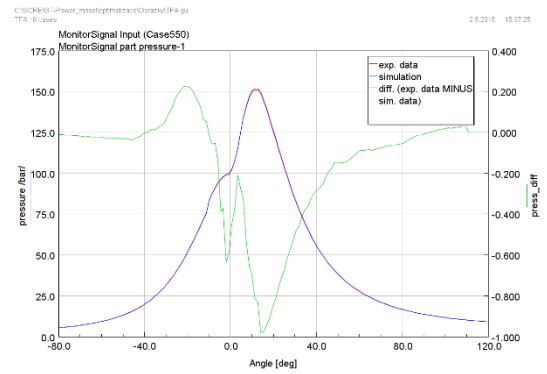
F Průběhy tlaku ve válci

V této příloze jsou zobrazeny průběhy tlaku ve válci – naměřený (*exp. data*), vypočtený (*simulation*) a jejich absolutní rozdíl (*diff.*) v jednotlivých bodech.

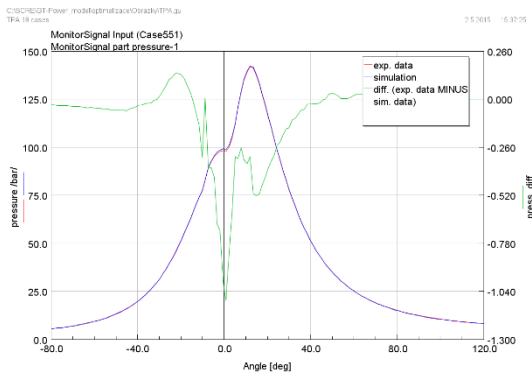
F.1 Třítlaková analýza



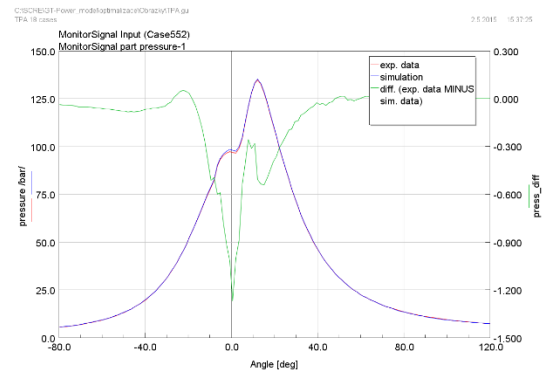
a: #549 (bod 1).



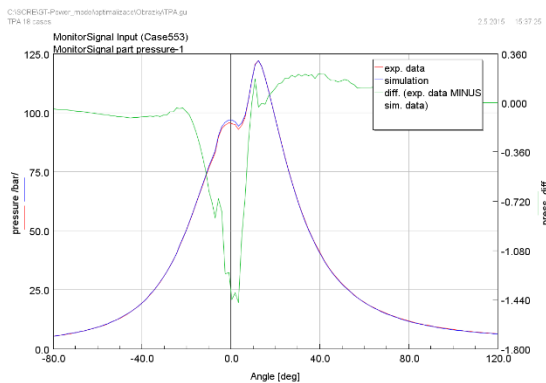
b: #550 (bod 2).



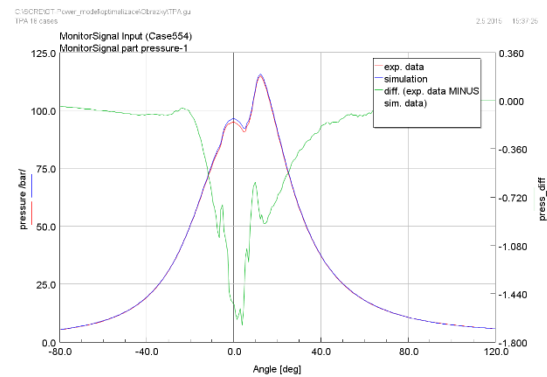
c: #551 (bod 3).



d: #552 (bod 4).

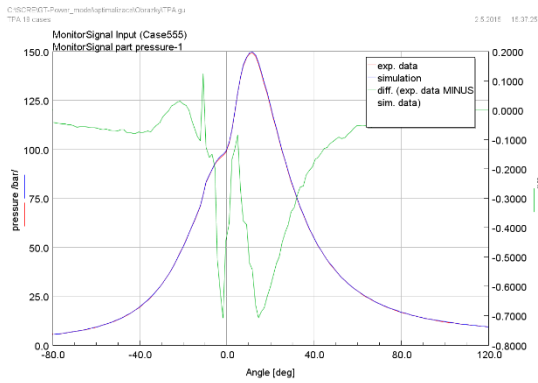


e: #553 (bod 5).

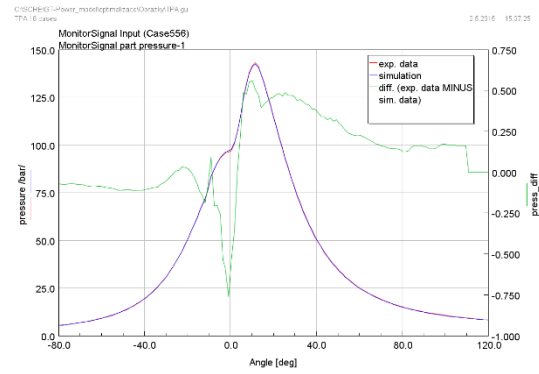


f: #554 (bod 6).

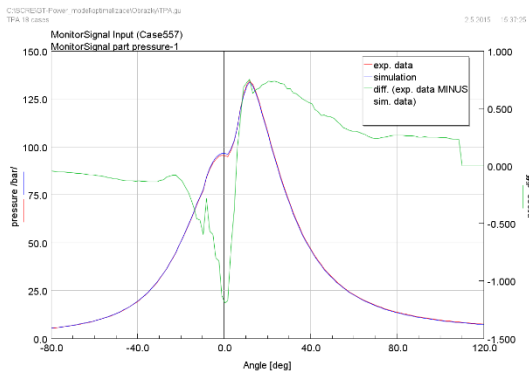
Obr. F.1.1: Průběhy tlaku ve válci pro TPA analýzu 18 bodů (přepřínovaný režim), body 1-6.



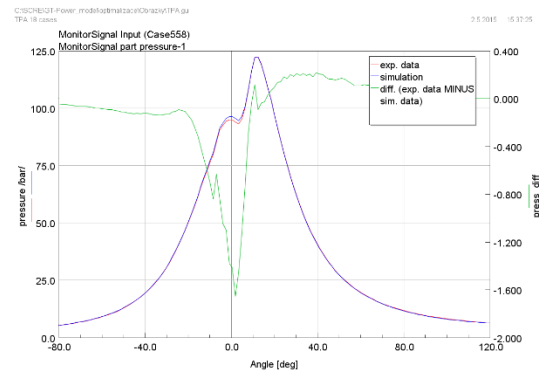
g: #555 (bod 7).



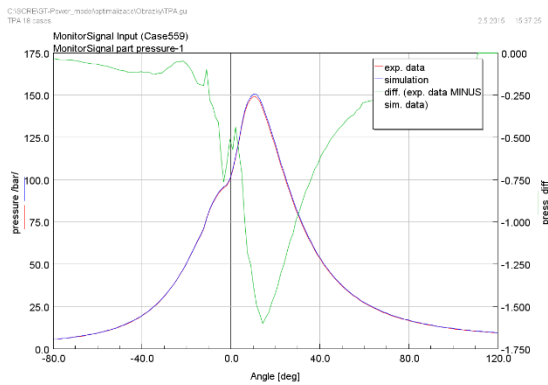
h: #556 (bod 8).



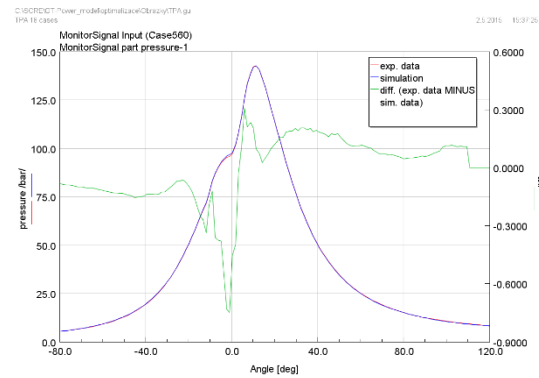
i: #557 (bod 9).



j: #558 (bod 10).

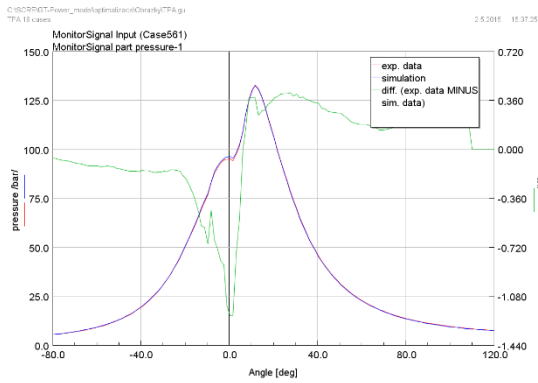


k: #559 (bod 11).

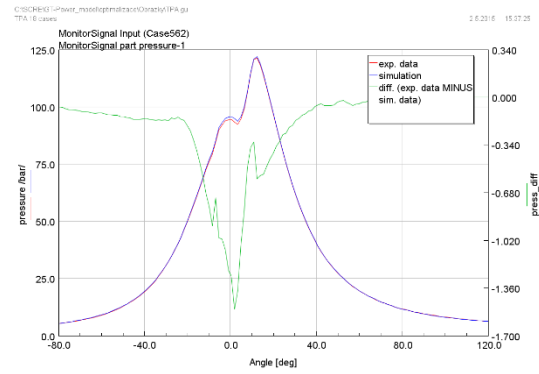


l: #560 (bod 12).

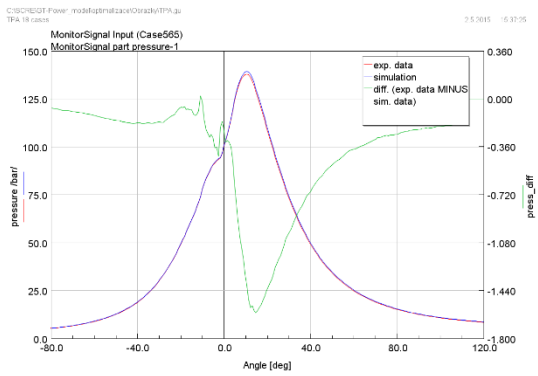
Obr. F.1.2: Průběhy tlaku ve válci pro TPA analýzu 18 bodů (přepřínovaný režim), body 7-12.



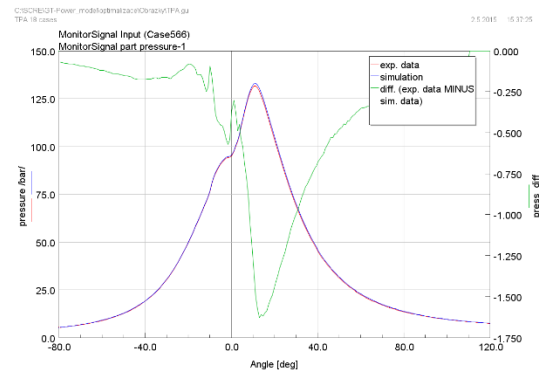
m: #561 (bod 13).



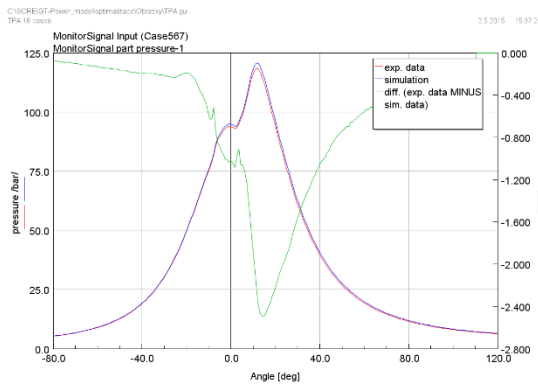
n: #562 (bod 14).



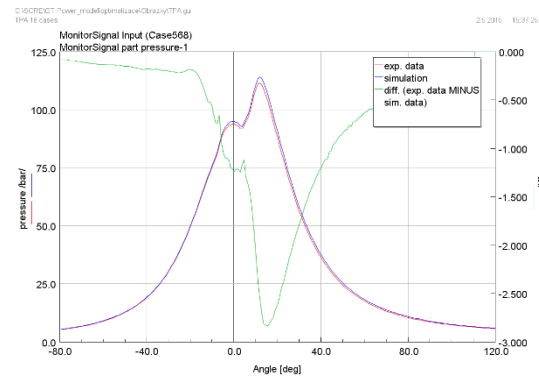
o: #565 (bod 15).



p: #566 (bod 16).

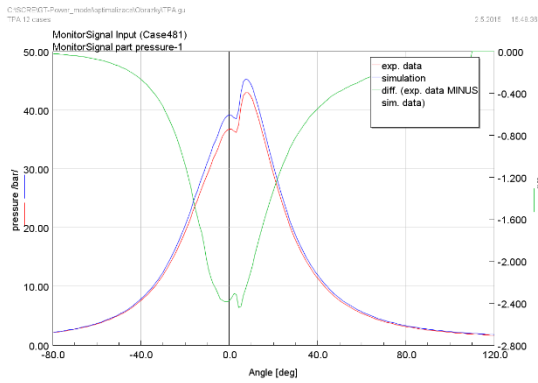


q: #567 (bod 17).

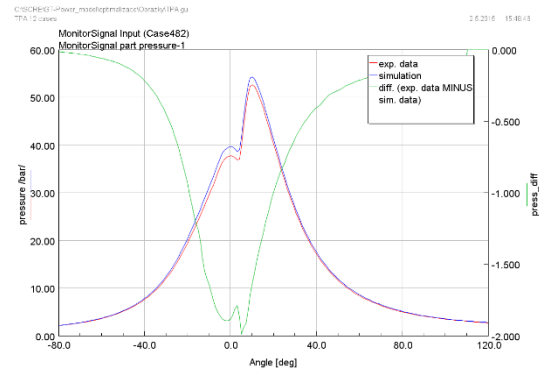


r: #568 (bod 18).

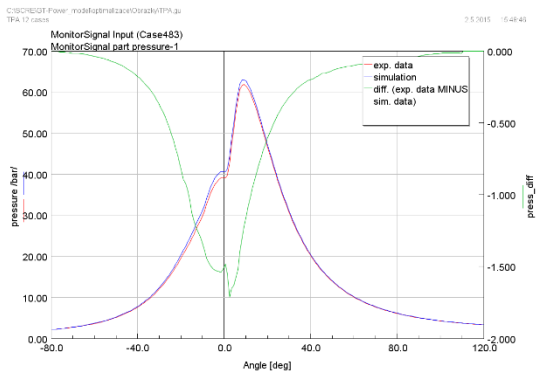
Obr. F.1.3: Průběhy tlaku ve válci pro TPA analýzu 18 bodů (přepřínovaný režim), body 13-18.



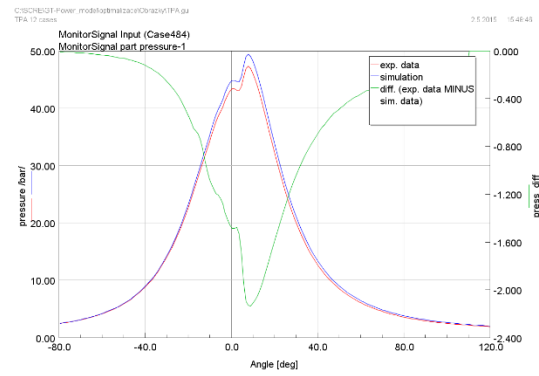
a: #481 (bod 1).



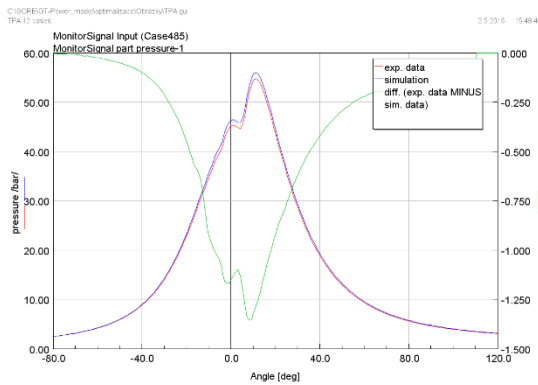
b: #482 (bod 2).



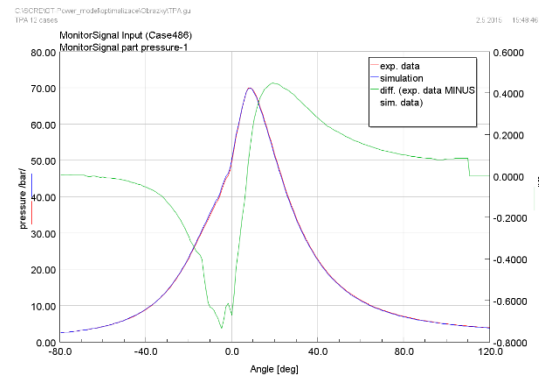
c: #483 (bod 3).



d: #484 (bod 4).

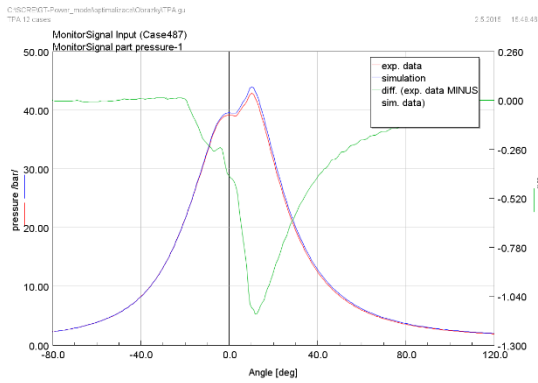


e: #485 (bod 5).

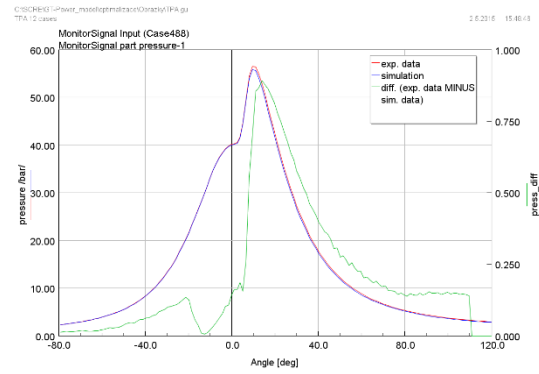


f: #486 (bod 6).

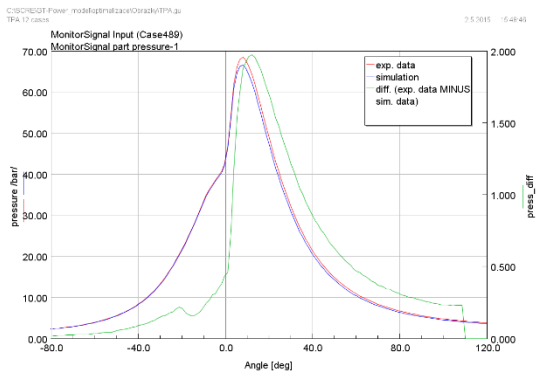
Obr. F.1.4: Průběhy tlaku ve válci pro TPA analýzu 12 bodů (atmosférický režim), body 1-6.



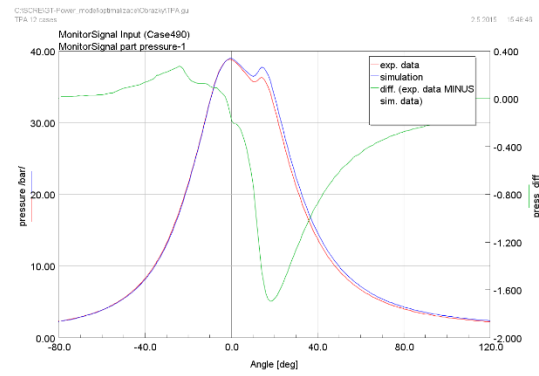
g: #487 (bod 7).



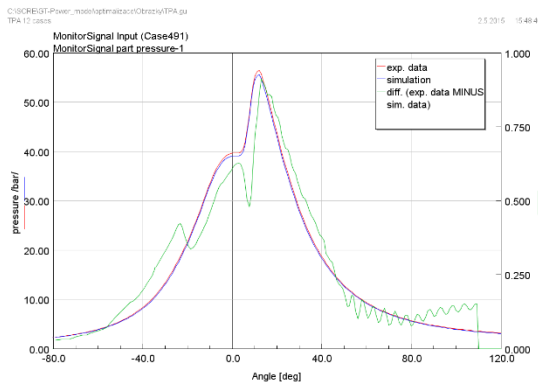
h: #488 (bod 8).



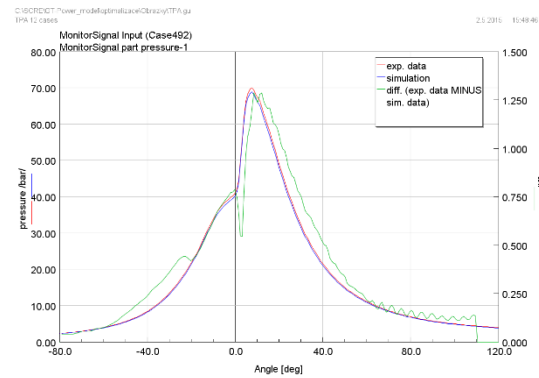
i: #489 (bod 9).



j: #490 (bod 10).



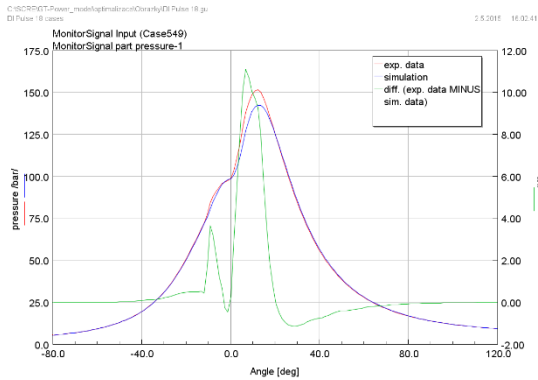
k: #491 (bod 11).



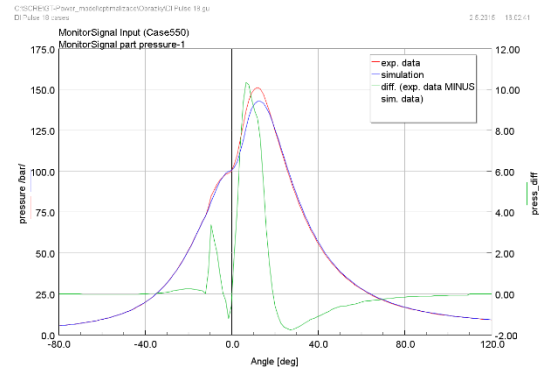
l: #492 (bod 12).

Obr. F.1.5: Průběhy tlaku ve válci pro TPA analýzu 12 bodů (atmosférický režim), body 7-12.

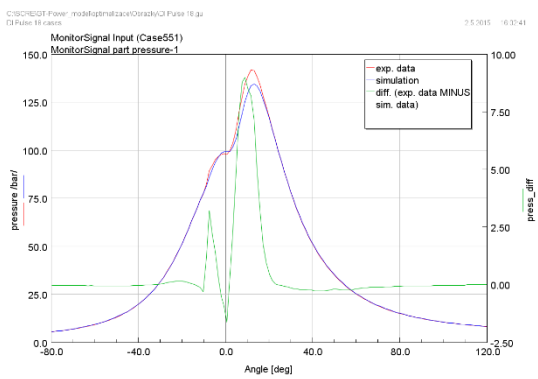
F.2 DI Pulse



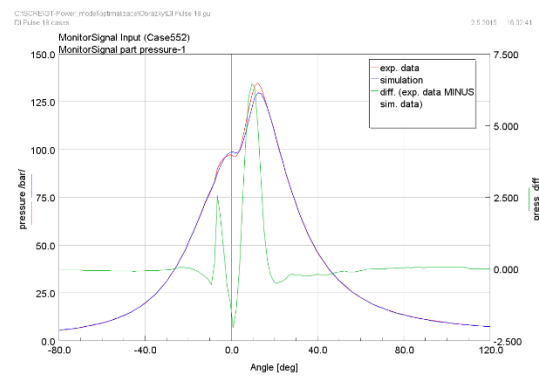
a: #549 (bod 1).



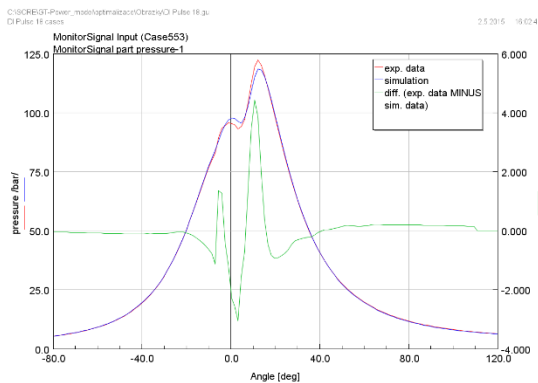
b: #550 (bod 2).



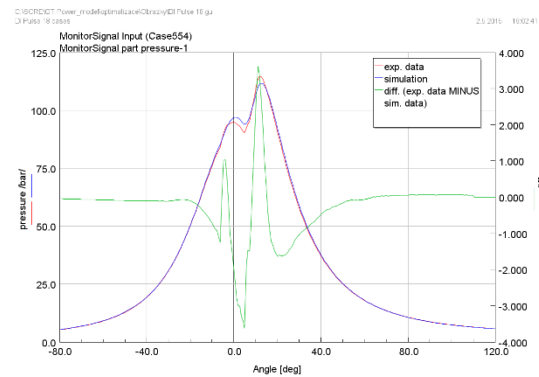
c: #551 (bod 3).



d: #552 (bod 4).

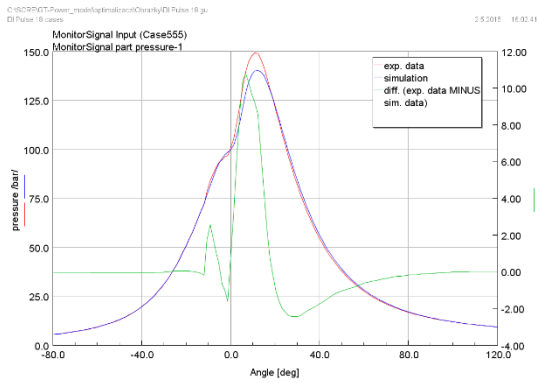


e: #553 (bod 5).

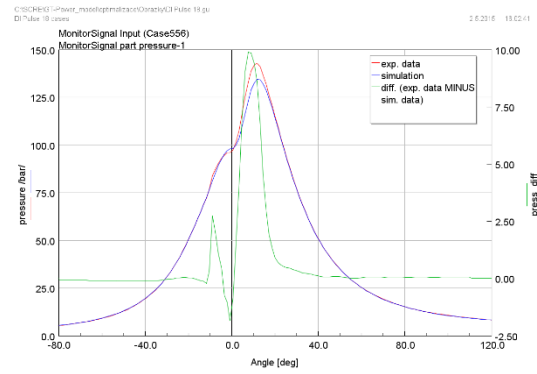


f: #554 (bod 6).

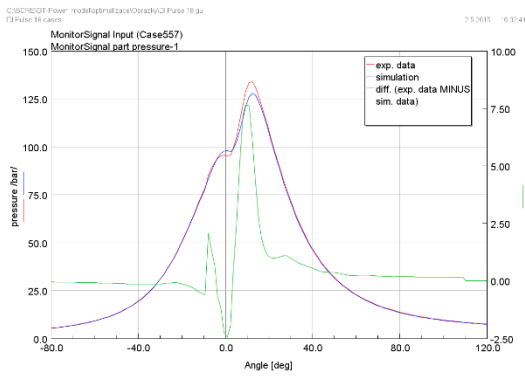
Obr. F.2.1: Průběhy tlaku ve válci pro prediktivní model DI Pulse 18 bodů (přepřínovaný režim), body 1-6.



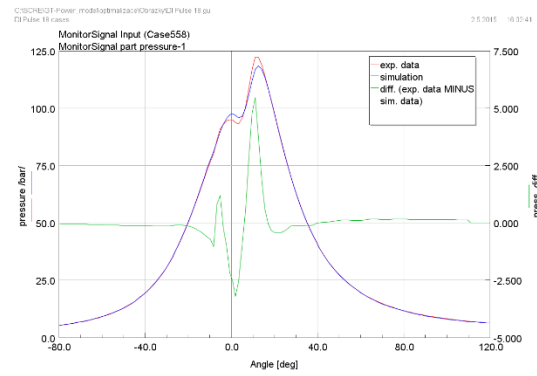
g: #555 (bod 7).



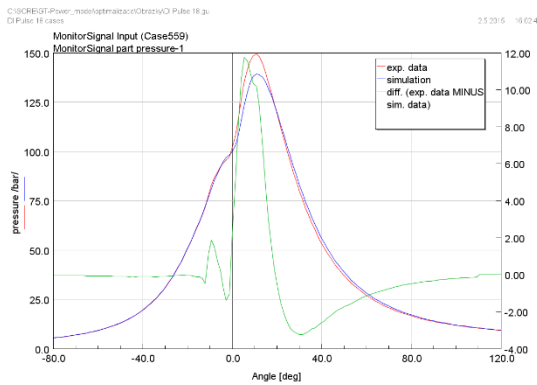
h: #556 (bod 8).



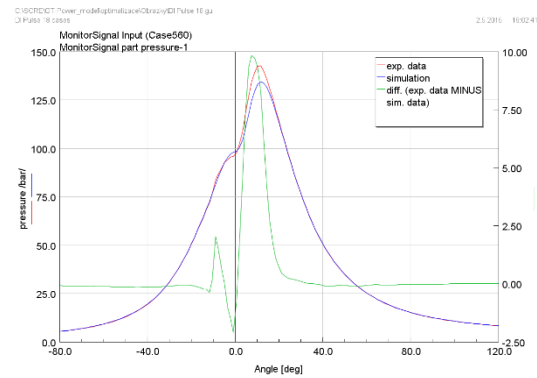
i: #557 (bod 9).



j: #558 (bod 10).

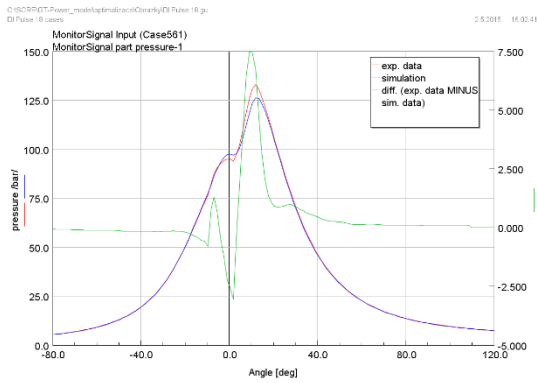


k: #559 (bod 11).

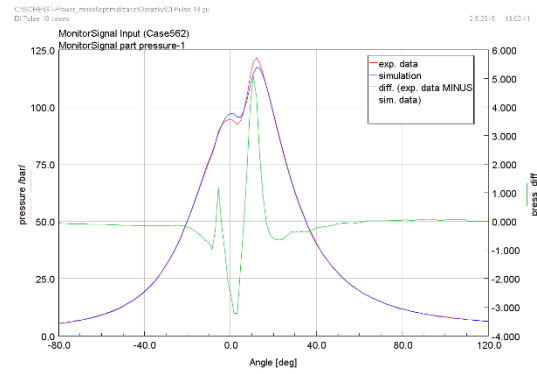


l: #560 (bod 12).

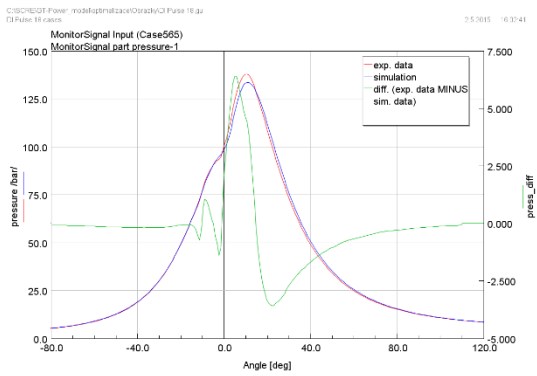
Obr. F.2.2: Průběhy tlaku ve válci pro prediktivní model DI Pulse 18 bodů (přepřínávaný režim), body 7-12.



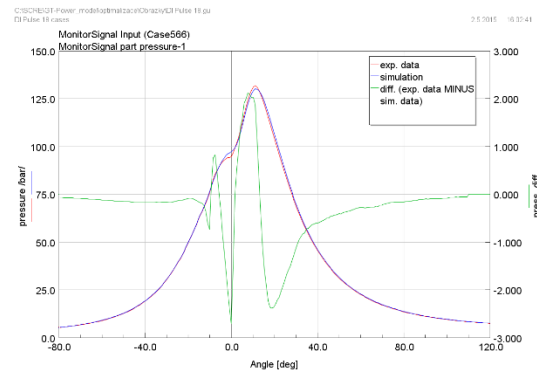
m: #561 (bod 13).



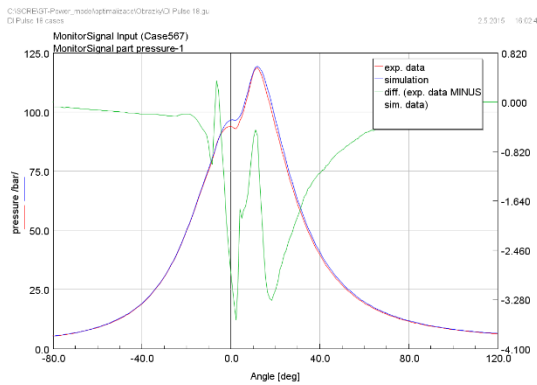
n: #562 (bod 14).



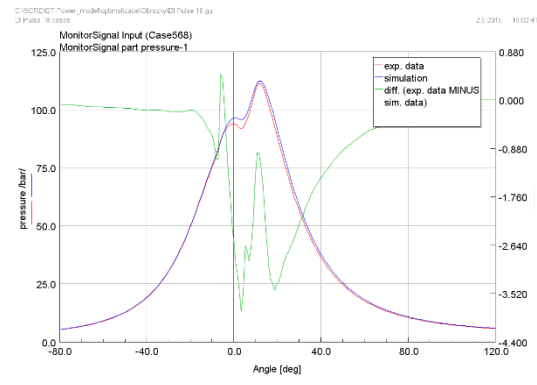
o: #565 (bod 15).



p: #566 (bod 16).

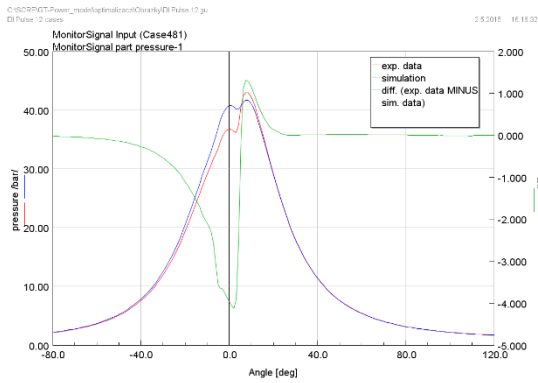


q: #567 (bod 17).

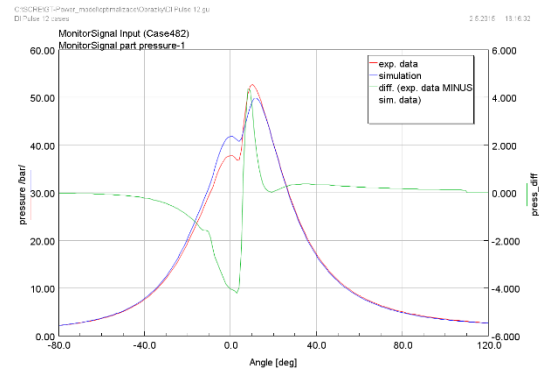


r: #568 (bod 18).

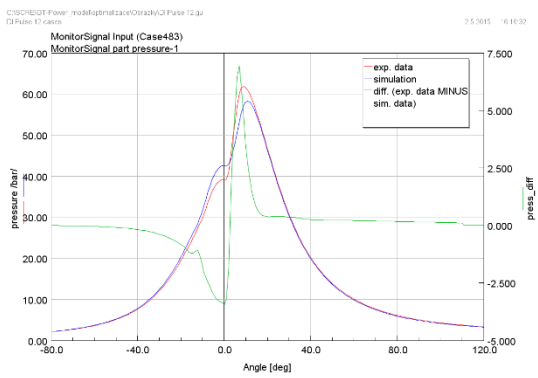
Obr. F.2.3: Průběhy tlaku ve válci pro prediktivní model DI Pulse 18 bodů (přepřínávaný režim), body 13-18.



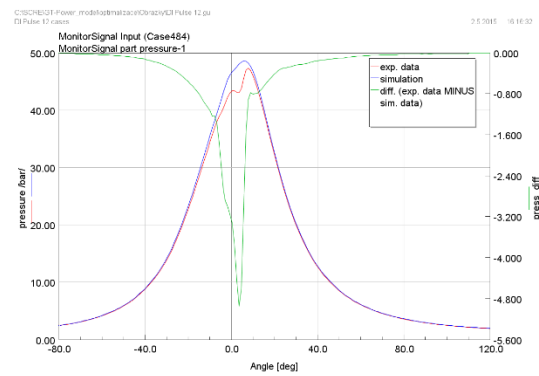
a: #481 (bod 1).



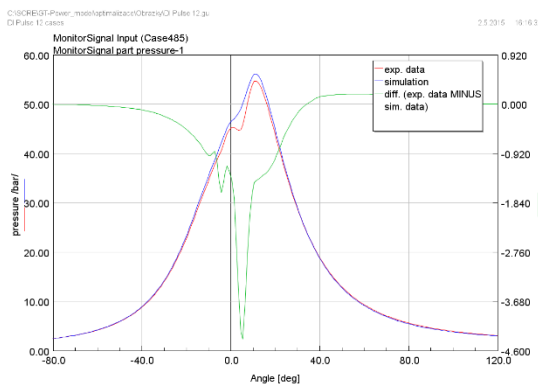
b: #482 (bod 2).



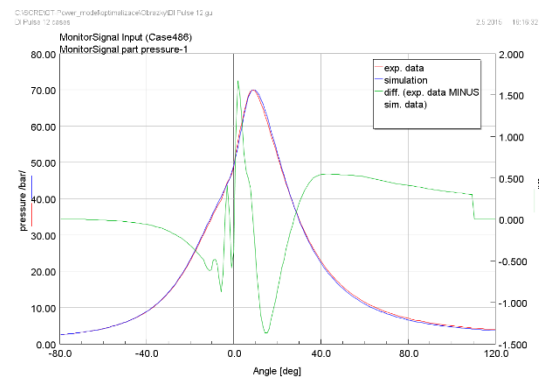
c: #483 (bod 3).



d: #484 (bod 4).

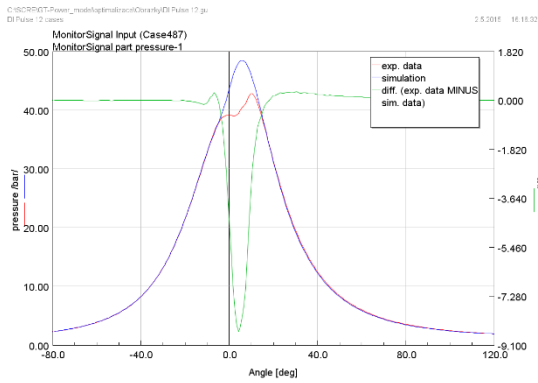


e: #485 (bod 5).

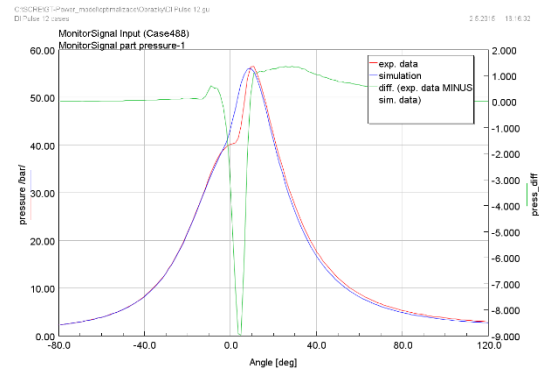


f: #486 (bod 6).

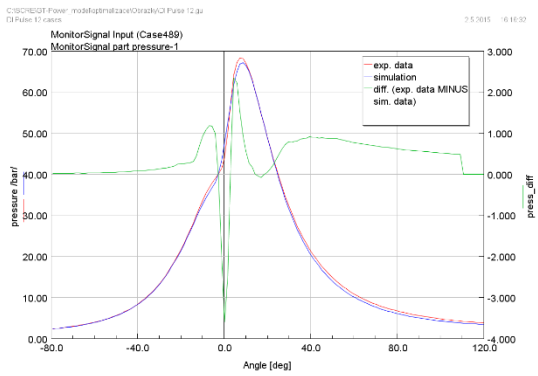
Obr. F.2.4: Průběhy tlaku ve válci pro prediktivní model DI Pulse 12 bodů (atmosférický režim), body 1-6.



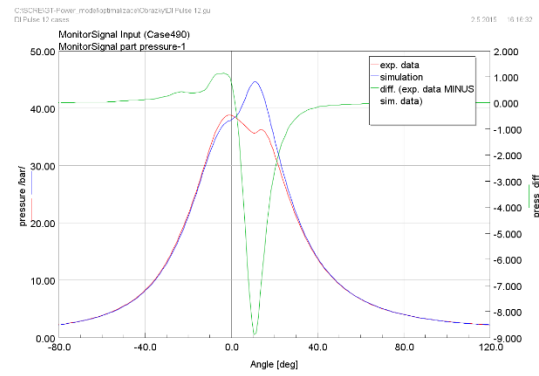
g: #487 (bod 7).



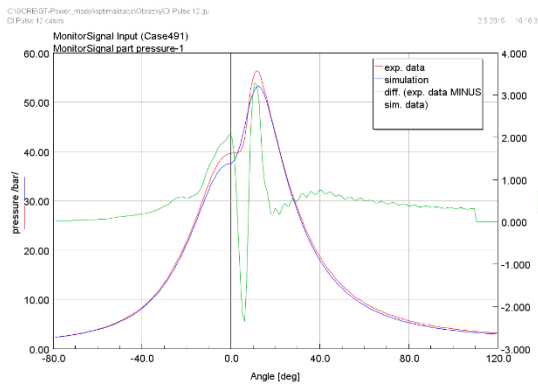
h: #488 (bod 8).



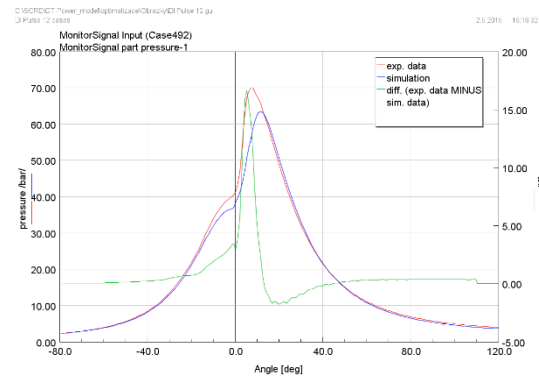
i: #489 (bod 9).



j: #490 (bod 10).



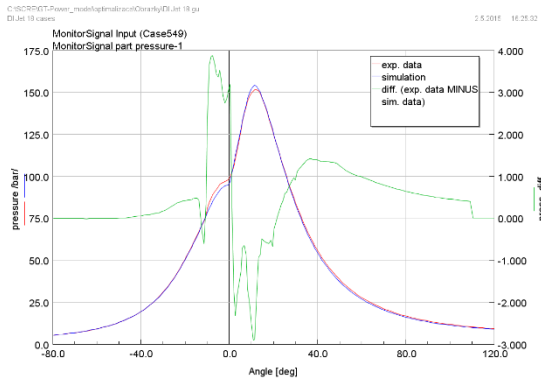
k: #491 (bod 11).



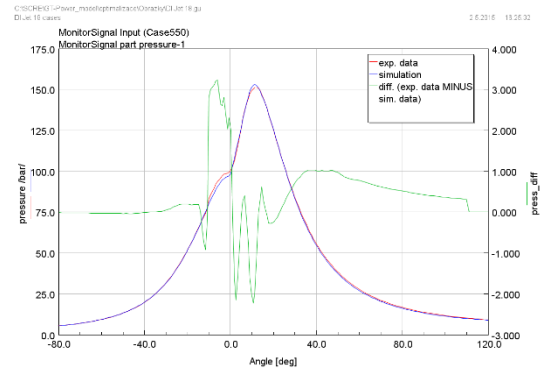
l: #492 (bod 12).

Obr. F.2.5: Průběhy tlaku ve válci pro prediktivní model DI Pulse 12 bodů (atmosférický režim), body 7-12.

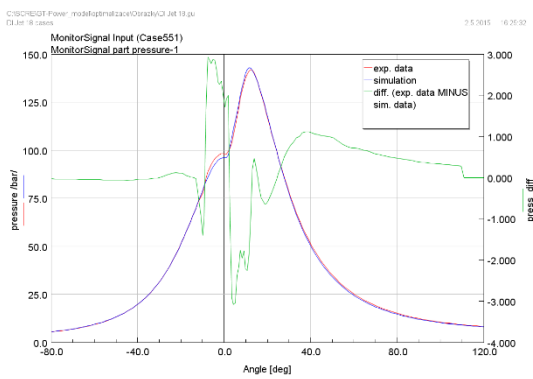
F.3 DI Jet



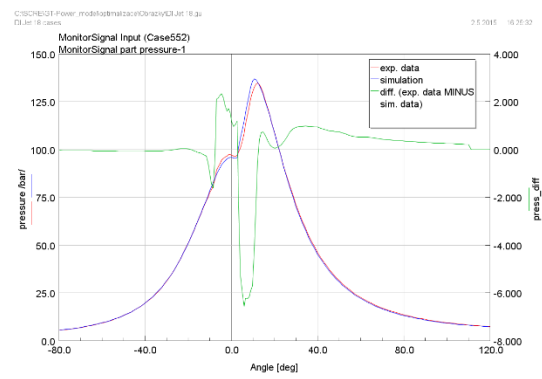
a: #549 (bod 1).



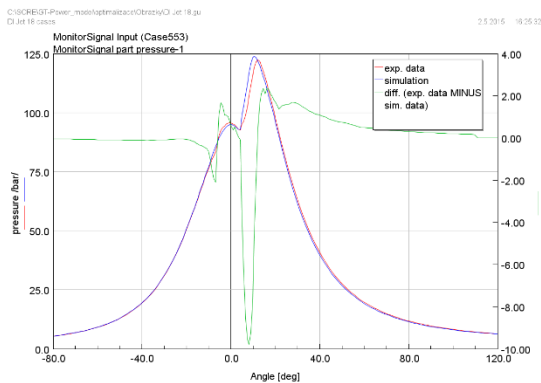
b: #550 (bod 2).



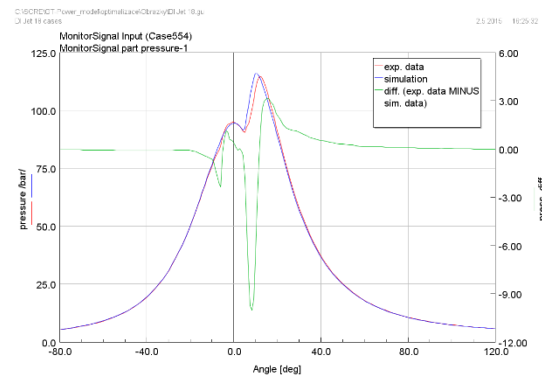
c: #551 (bod 3).



d: #552 (bod 4).

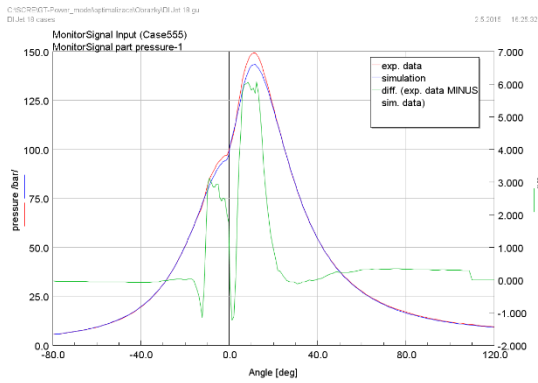


e: #553 (bod 5).

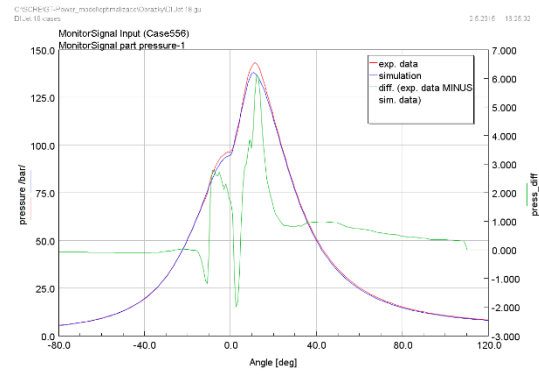


f: #554 (bod 6).

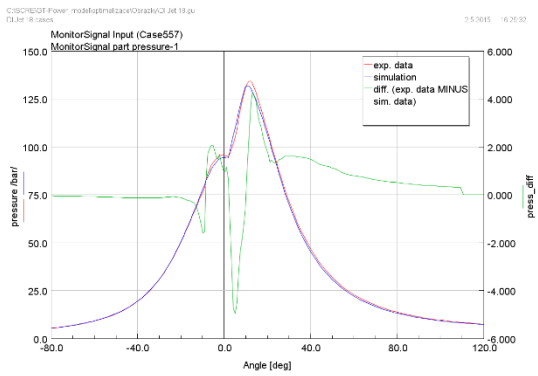
Obr. F.3.1: Průběhy tlaku ve válci pro prediktivní model DI Jet 18 bodů (přepřlňovaný režim), body 1-6.



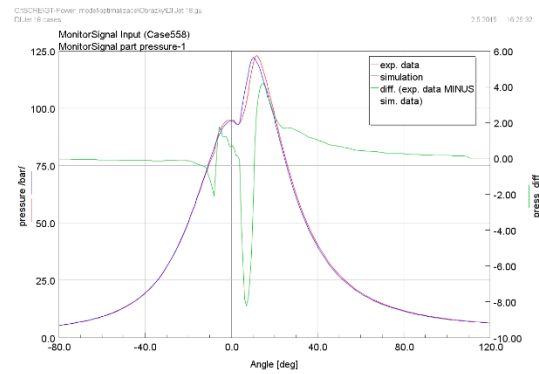
g: #555 (bod 7).



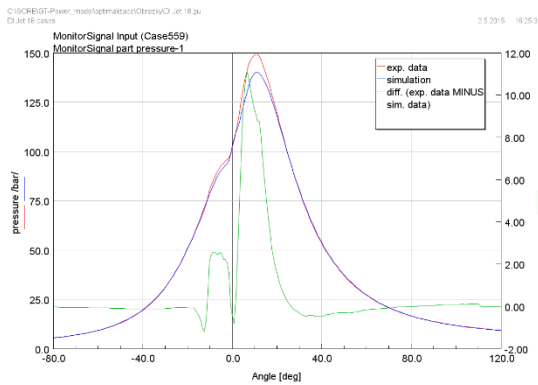
h: #556 (bod 8).



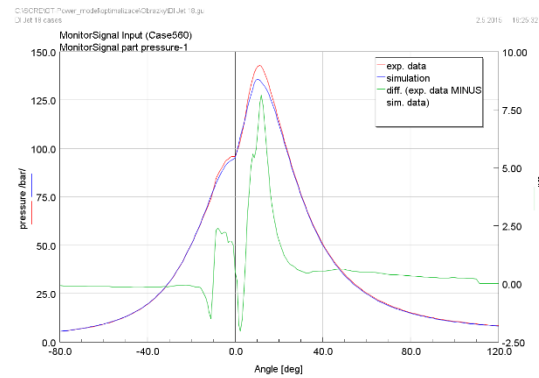
i: #557 (bod 9).



j: #558 (bod 10).

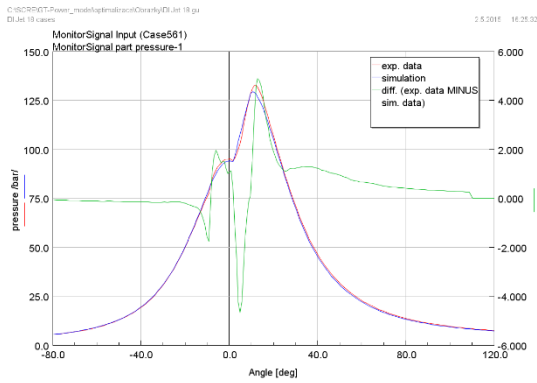


k: #559 (bod 11).

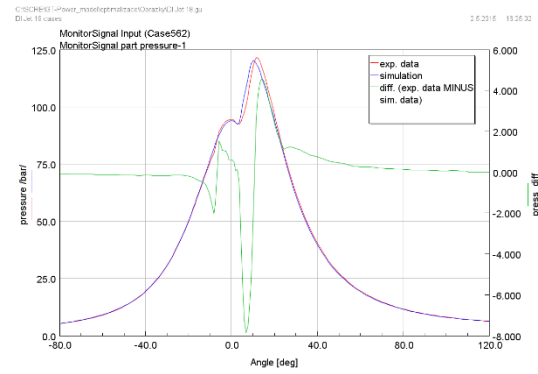


l: #560 (bod 12).

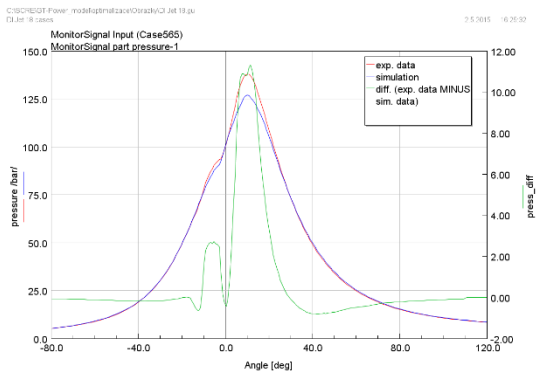
Obr. F.3.2: Průběhy tlaku ve válci pro prediktivní model DI Jet 18 bodů (přepřínovaný režim), body 7-12.



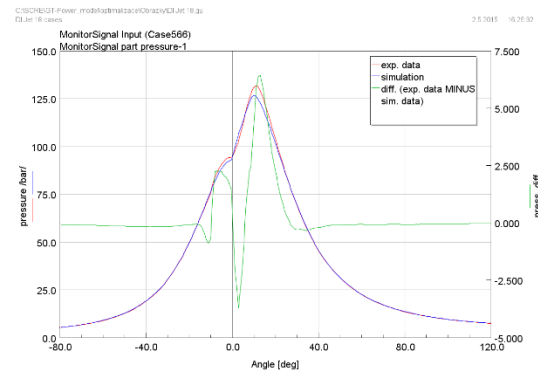
m: #561 (bod 13).



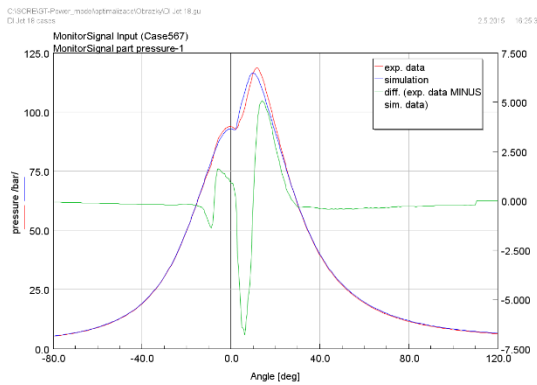
n: #562 (bod 14).



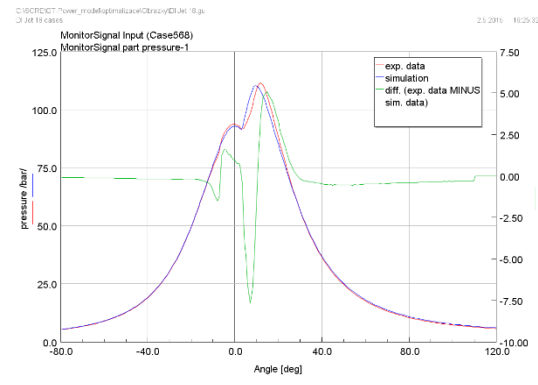
o: #565 (bod 15).



p: #566 (bod 16).

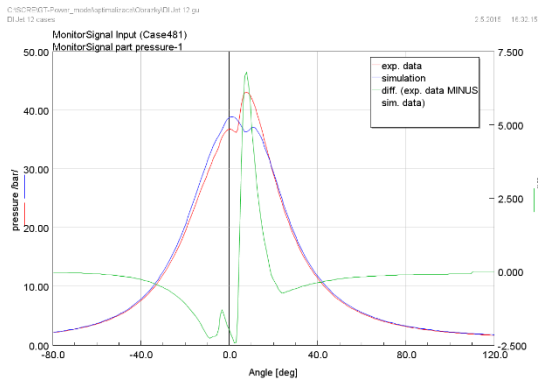


q: #567 (bod 17).

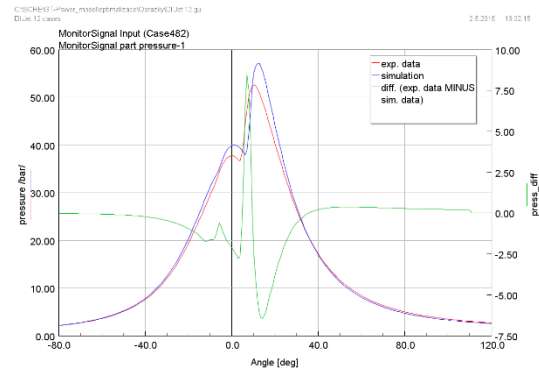


r: #568 (bod 18).

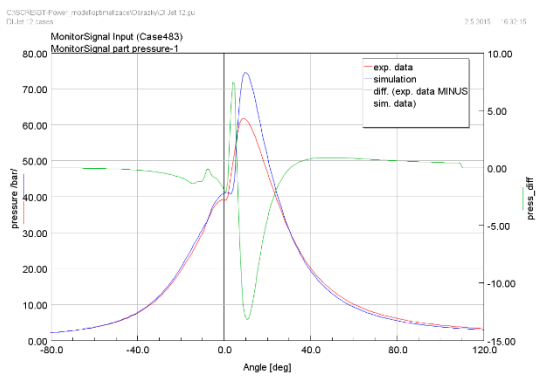
Obr. F.3.3: Průběhy tlaku ve válci pro prediktivní model DI Jet 18 bodů (přepřínovaný režim), body 13-18.



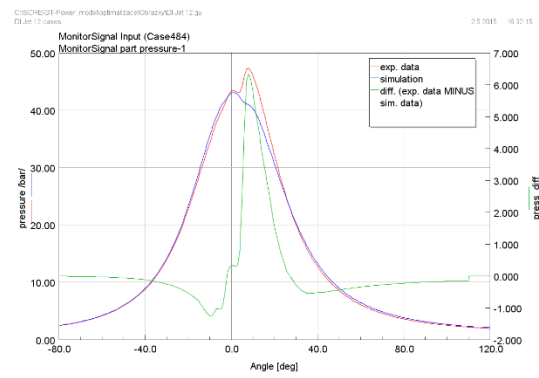
a: #481 (bod 1).



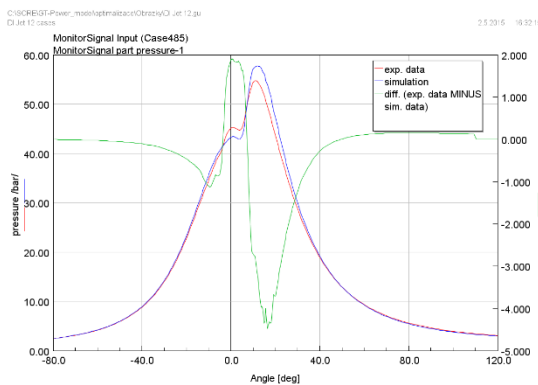
b: #482 (bod 2).



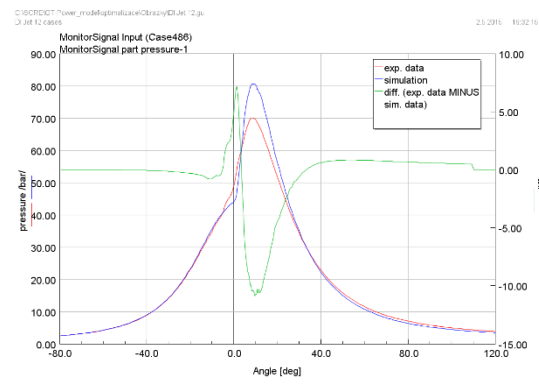
c: #483 (bod 3).



d: #484 (bod 4).

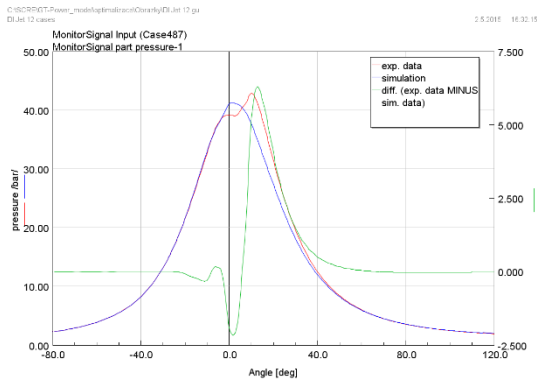


e: #485 (bod 5).

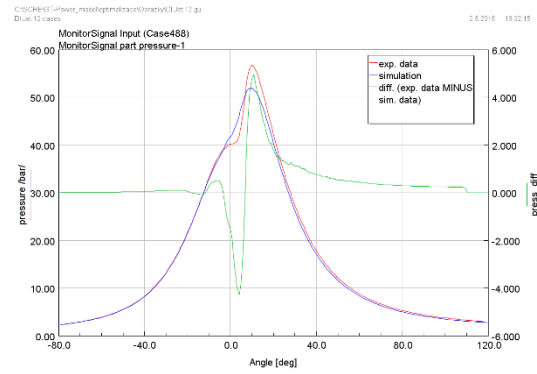


f: #486 (bod 6).

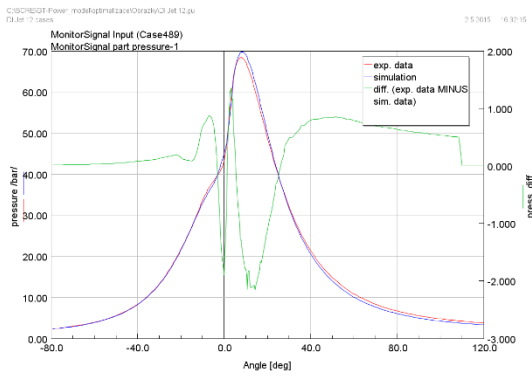
Obr. F.3.4: Průběhy tlaku ve válci pro prediktivní model DI Jet 12 bodů (atmosférický režim), body 1-6.



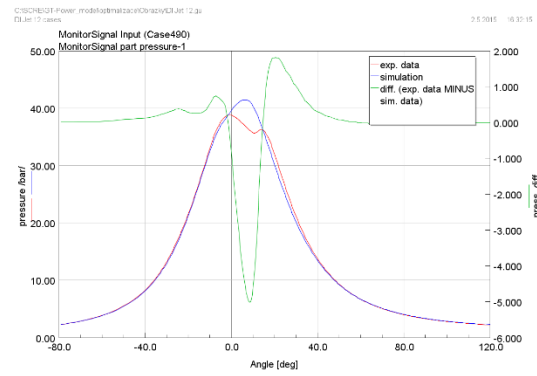
g: #487 (bod 7).



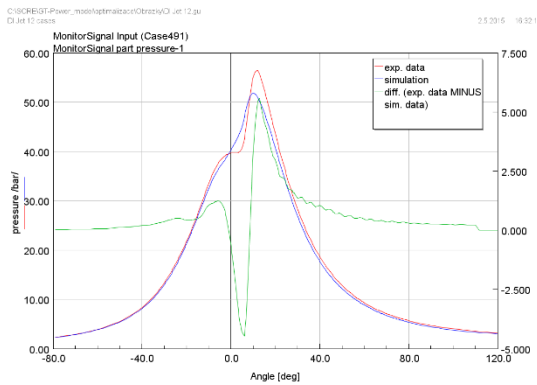
h: #488 (bod 8).



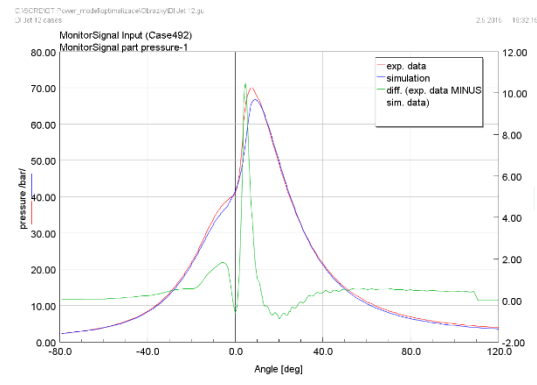
i: #489 (bod 9).



j: #490 (bod 10).



k: #491 (bod 11).



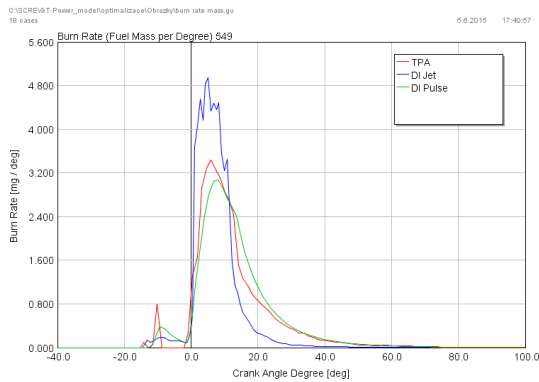
l: #492 (bod 12).

Obr. F.3.5: Průběhy tlaku ve válci pro prediktivní model DI Jet 12 bodů (atmosférický režim), body 7-12.

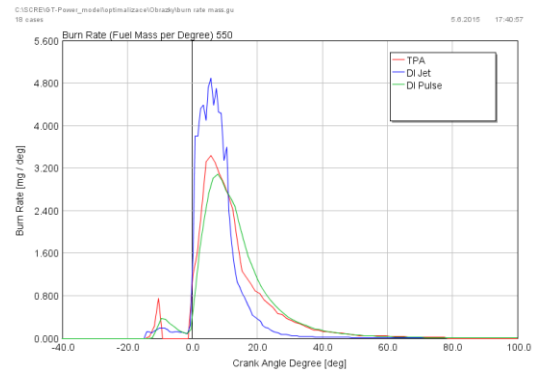
G Průběhy rychlosti hoření

Experimentální data rychlosti hoření jsou převzaty z TPA analýzy při zapnuté korekci LHV multiplieru (GT Power si sám koriguje potřebné množství energie získané z paliva).

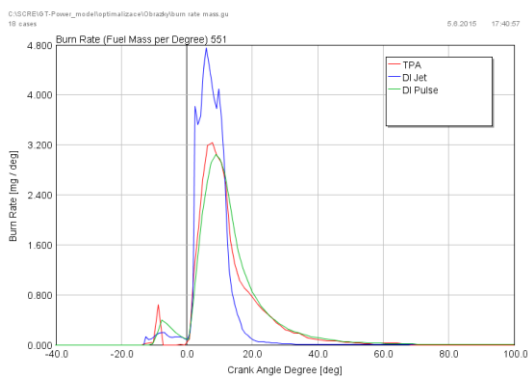
G.1 18 bodů, 1500-1800 rpm, 0-20% EGR, přepřínováno



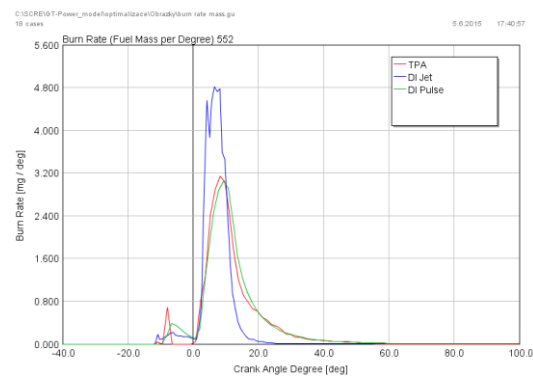
a: #549 (bod 1).



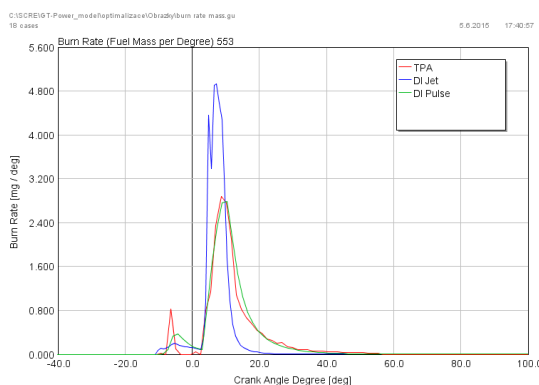
b: #550 (bod 2).



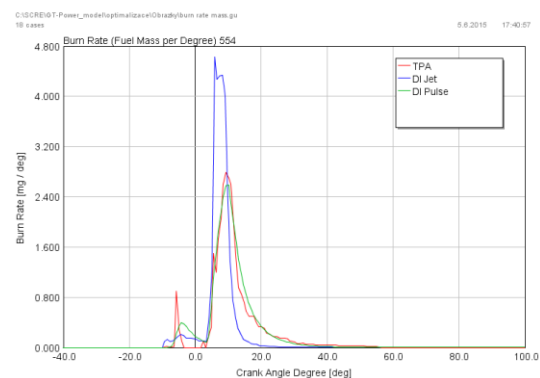
c: #551 (bod 3).



d: #552 (bod 4).

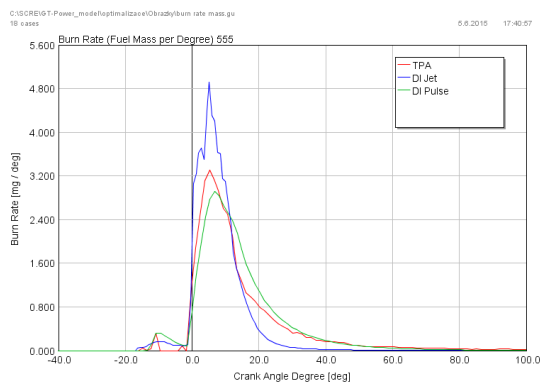


e: #553 (bod 5).

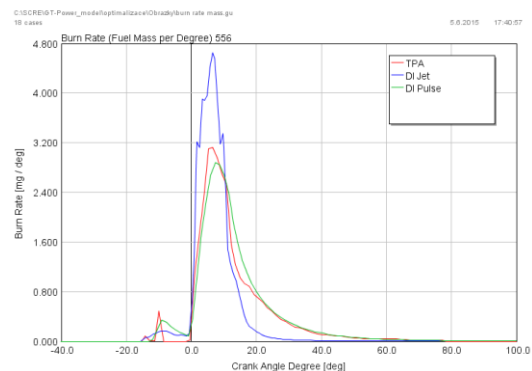


f: #554 (bod 6).

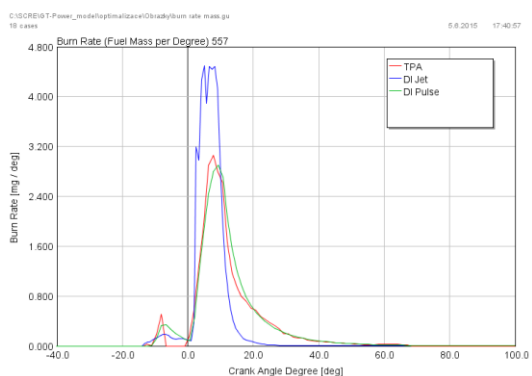
Obr. G.1.1: Průběhy měrné rychlosti hoření – naměřené, DI Jet a DI Pulse; body 1-6.



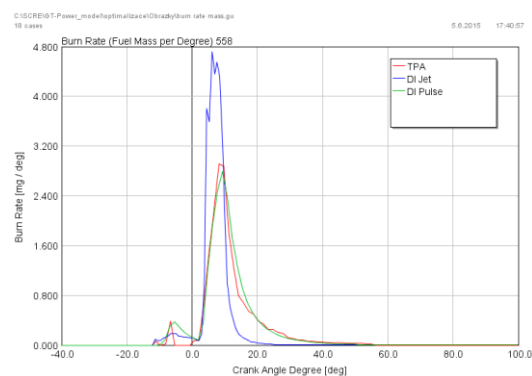
g: #555 (bod 7).



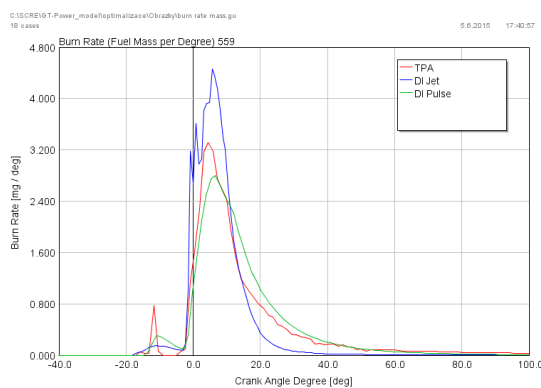
h: #556 (bod 8).



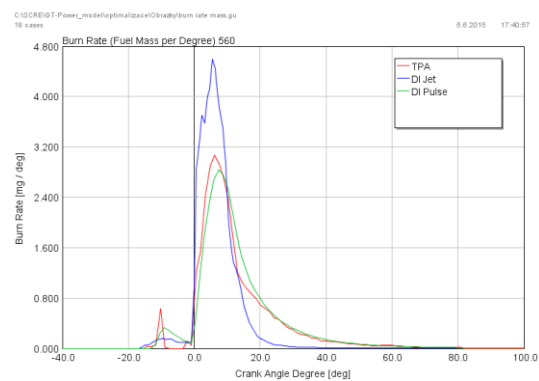
i: #557 (bod 9).



j: #558 (bod 10).

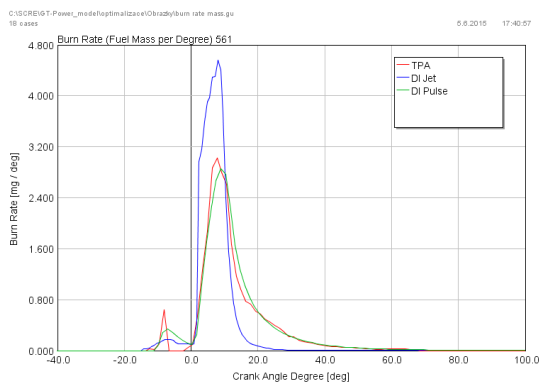


k: #559 (bod 11).

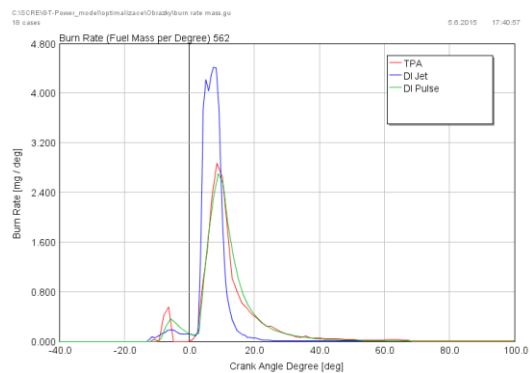


l: #560 (bod 12).

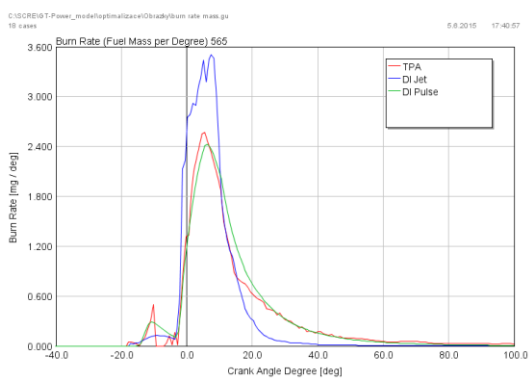
Obr. G.1.2: Průběhy rychlosti hoření – naměřené, DI Jet a DI Pulse; body 7-12.



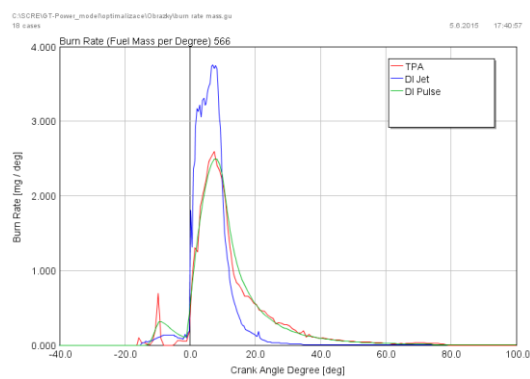
m: #561 (bod 13).



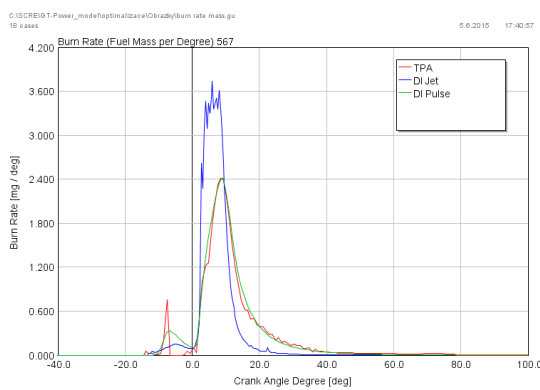
n: #562 (bod 14).



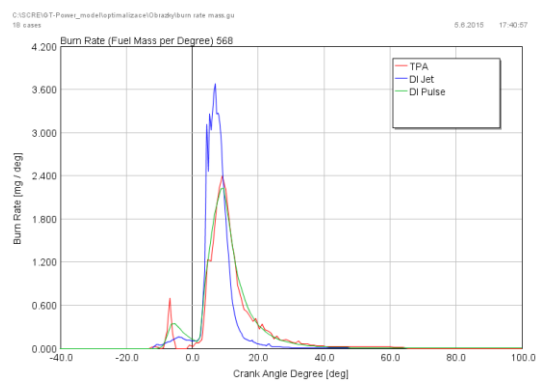
o: #565 (bod 15).



p: #566 (bod 16).



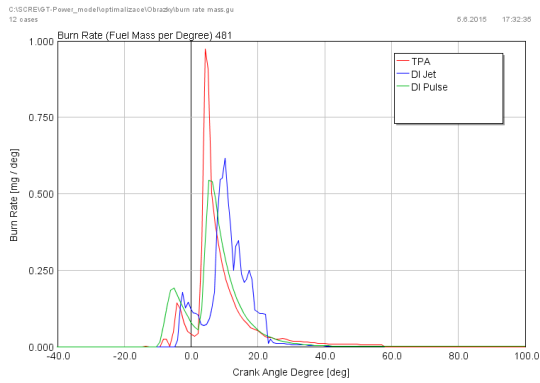
q: #567 (bod 17).



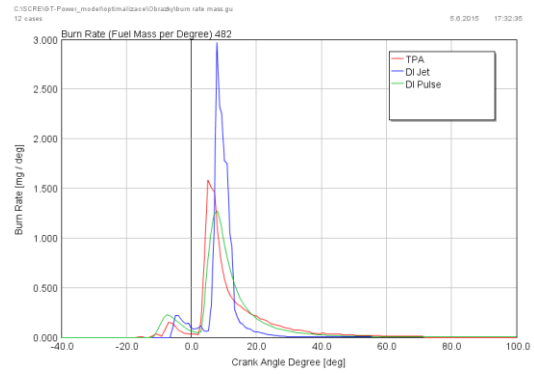
r: #568 (bod 18).

Obr. G.1.3: Průběhy rychlosti hoření – naměřené, DI Jet a DI Pulse; body 13-18.

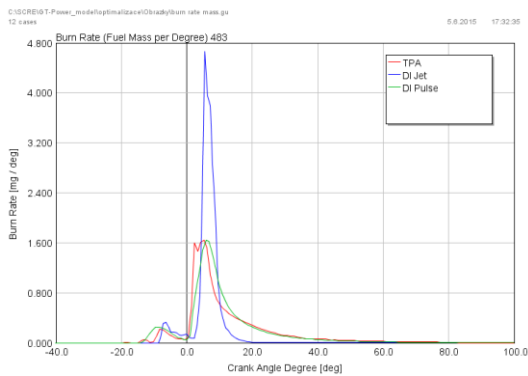
G.2 12 bodů, 1000-4000 rpm, 0% EGR, atmosférický režim



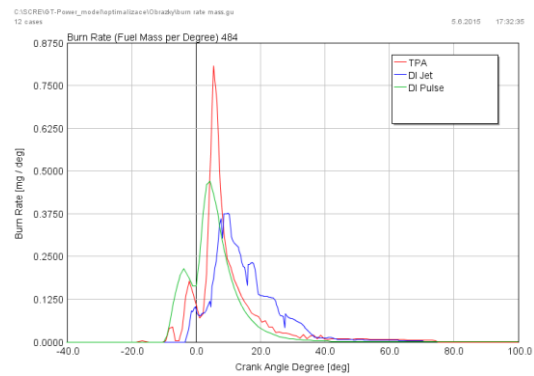
a: #481 (bod 1).



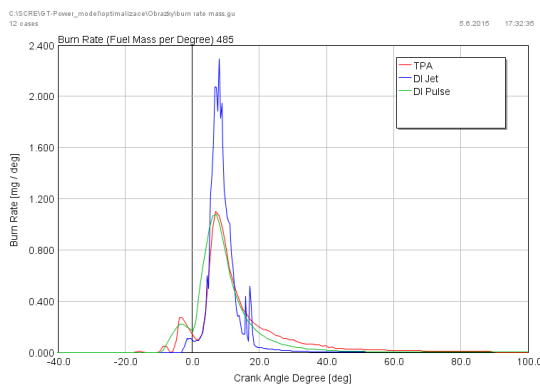
b: #482 (bod 2).



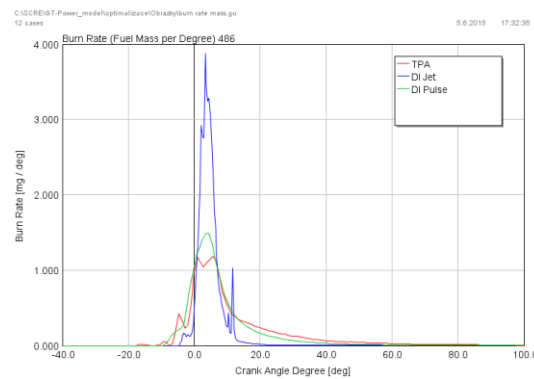
c: #483 (bod 3).



d: #484 (bod 4).

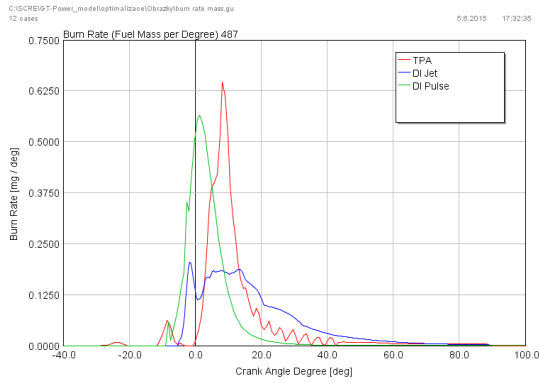


e: #485 (bod 5).

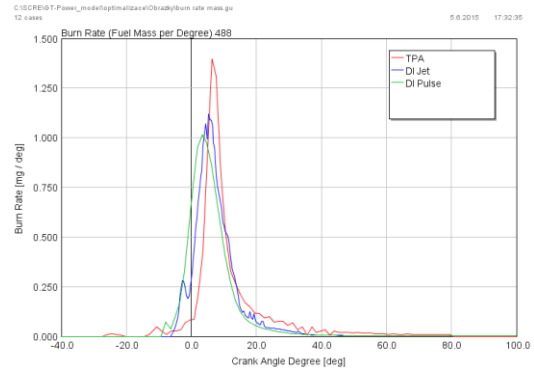


f: #486 (bod 6).

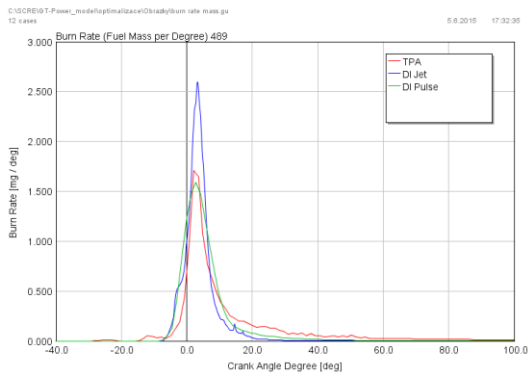
Obr. G.2.1: Průběhy rychlosti hoření – naměřené, DI Jet a DI Pulse; body 1-6.



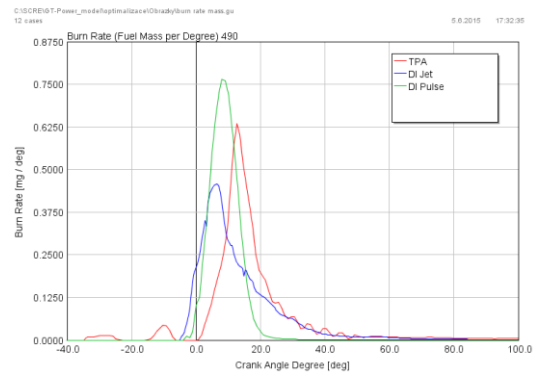
g: #487 (bod 7).



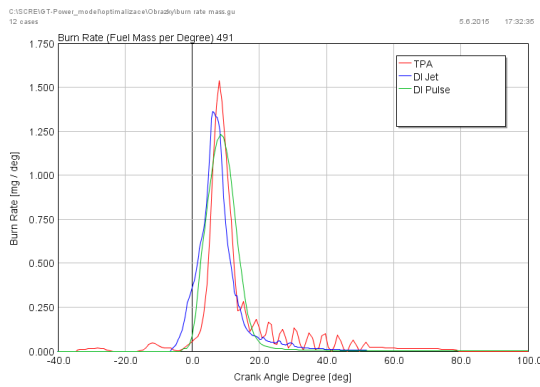
h: #488 (bod 8).



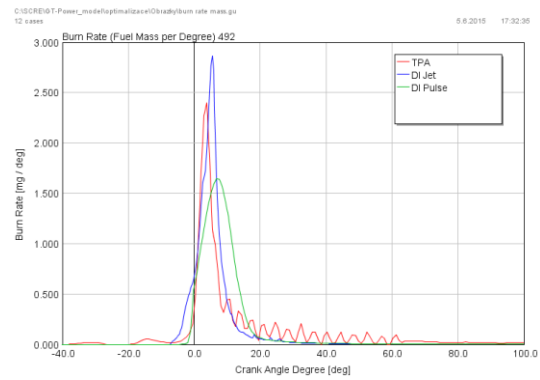
i: #489 (bod 9).



j: #490 (bod 10).



k: #491 (bod 11).

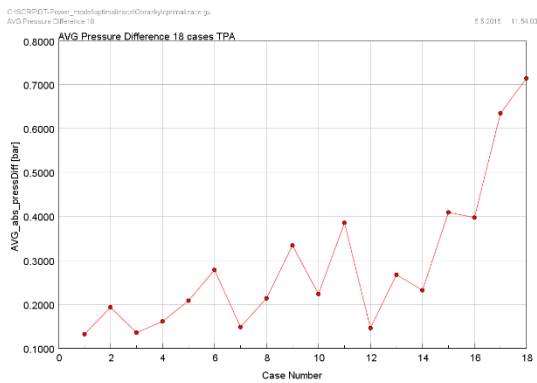


l: #492 (bod 12).

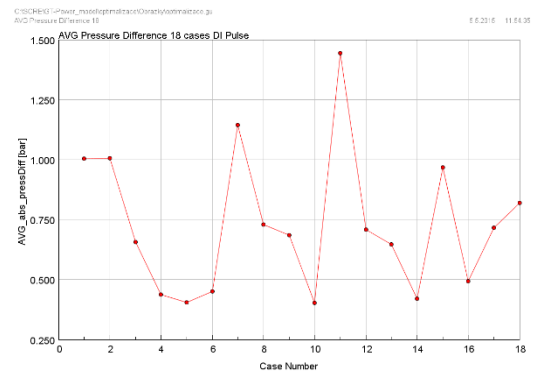
Obr. G.2.2: Průběhy rychlosti hoření – naměřené, DI Jet a DI Pulse; body 7-12.

H Průběhy minimalizovaných parametrů

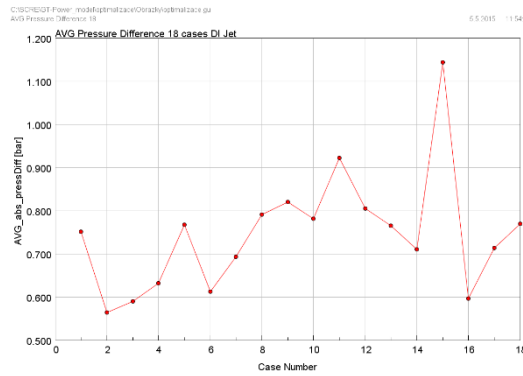
H.1 18 bodů, 1500-1800 rpm, 0-20% EGR, přeplňováno



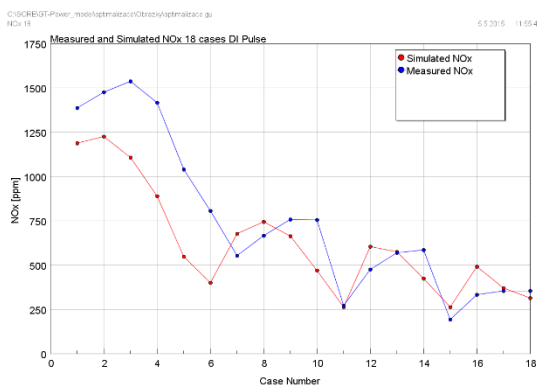
a: Absolutní rozdíl naměřeného a vypočteného tlaku ve válci – TPA analýza.



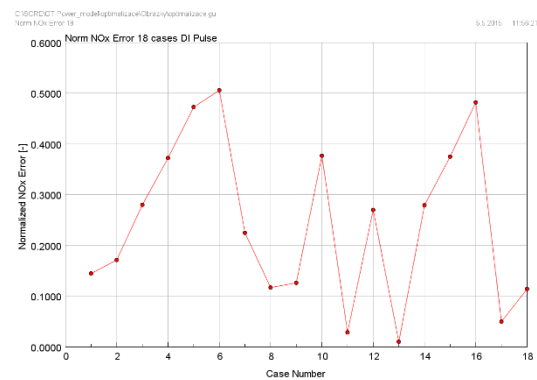
b: Absolutní rozdíl naměřeného a vypočteného tlaku ve válci – DI Pulse.



c: Absolutní rozdíl naměřeného a vypočteného tlaku ve válci – DI Jet.

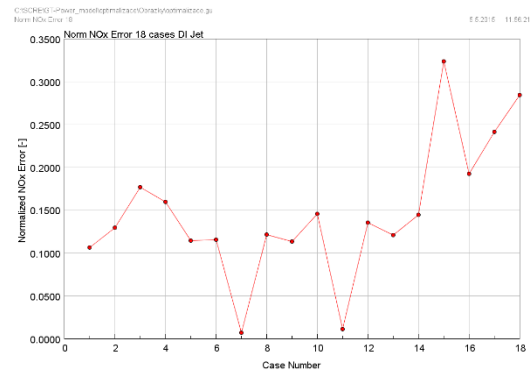
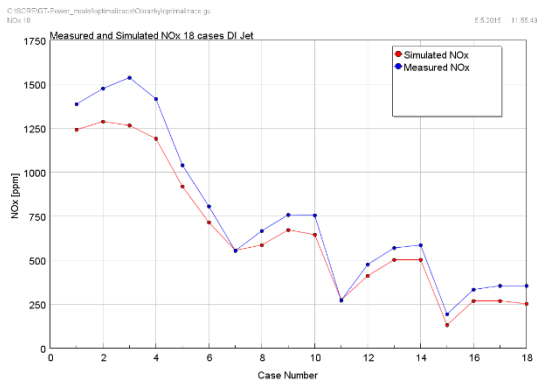


d: Průběh naměřených (measured) a vypočtených (simulated) emisí oxidů dusíku – DI Pulse.



e: Normalizovaná odchylka naměřených a vypočtených emisí oxidů dusíku – DI Pulse.

Obr. H.1.1: Průběhy minimalizovaného absolutního rozdílu tlaku a emisí oxidů dusíku pro přeplňovaný režim – TPA, DI Pulse a DI Jet.

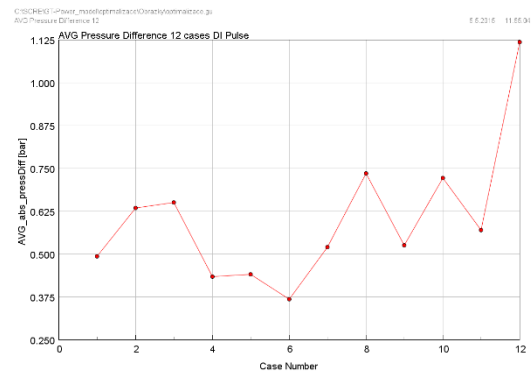
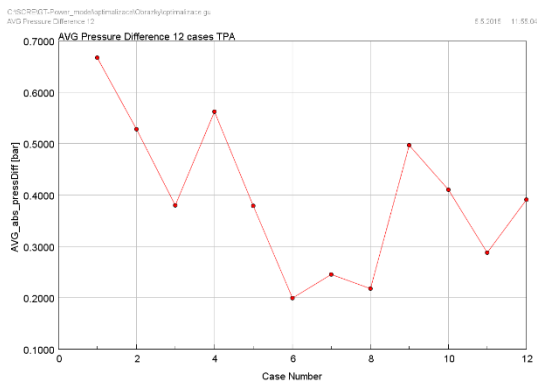


f: Průběh naměřených (measured) a vypočtených (simulated) emisí oxidů dusíku – DI Jet.

g: Normalizovaná odchylka naměřených a vypočtených emisí oxidů dusíku – DI Jet.

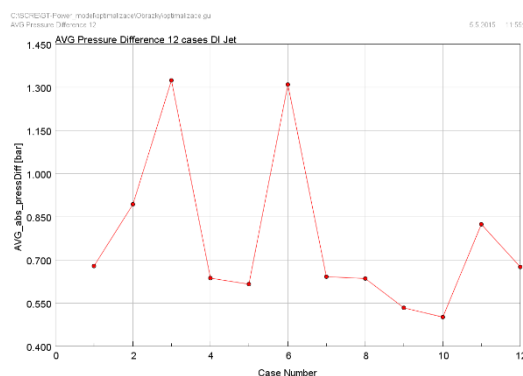
Obr. H.1.2: Průběhy minimalizovaného absolutního rozdílu tlaku a emisí oxidů dusíku pro přepřínovaný režim – TPA, DI Pulse a DI Jet (doplňk).

H.2 12 bodů, 1000-4000 rpm, 0% EGR, atmosférický režim



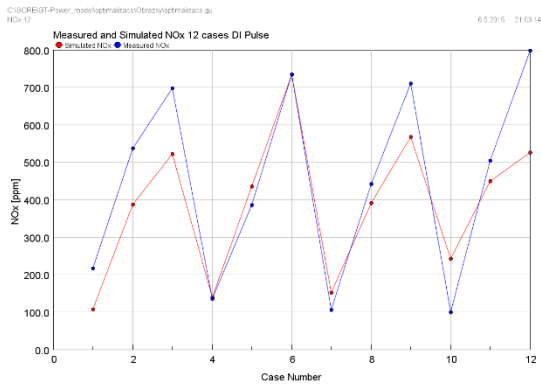
a: Absolutní rozdíl naměřeného a vypočteného tlaku ve válci – TPA analýza.

b: Absolutní rozdíl naměřeného a vypočteného tlaku ve válci – DI Pulse.

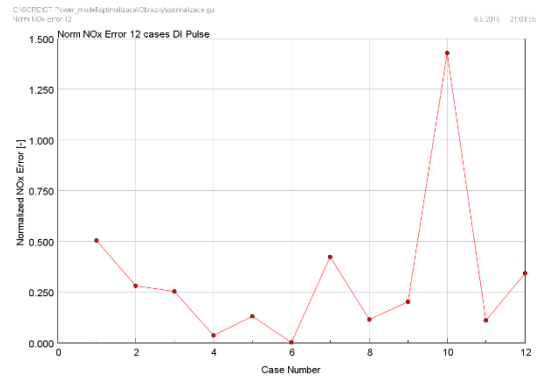


c: Absolutní rozdíl naměřeného a vypočteného tlaku ve válci – DI Jet.

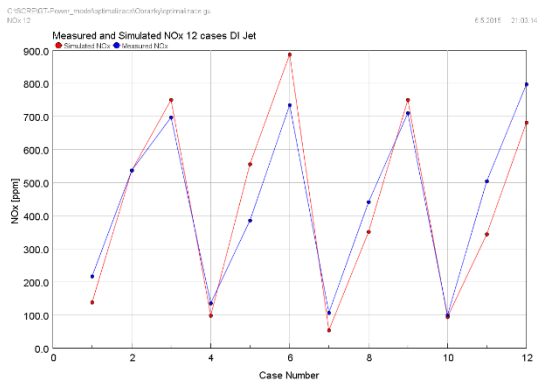
Obr. H.2.1: Průběhy minimalizovaného absolutního rozdílu tlaku a emisí oxidů dusíku pro atmosférický režim – TPA, DI Pulse a DI Jet.



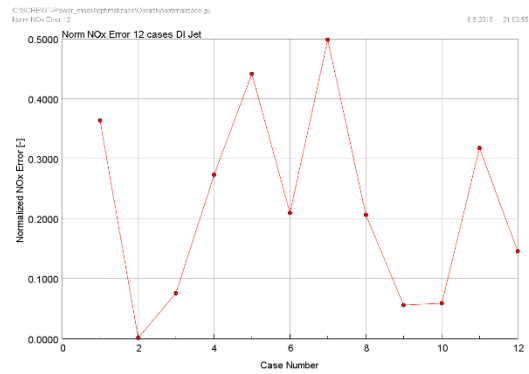
d: Průběh naměřených (measured) a vypočtených (simulated) emisí oxidů dusíku – DI Pulse.



e: Normalizovaná odchylka naměřených a vypočtených emisí oxidů dusíku – DI Pulse.



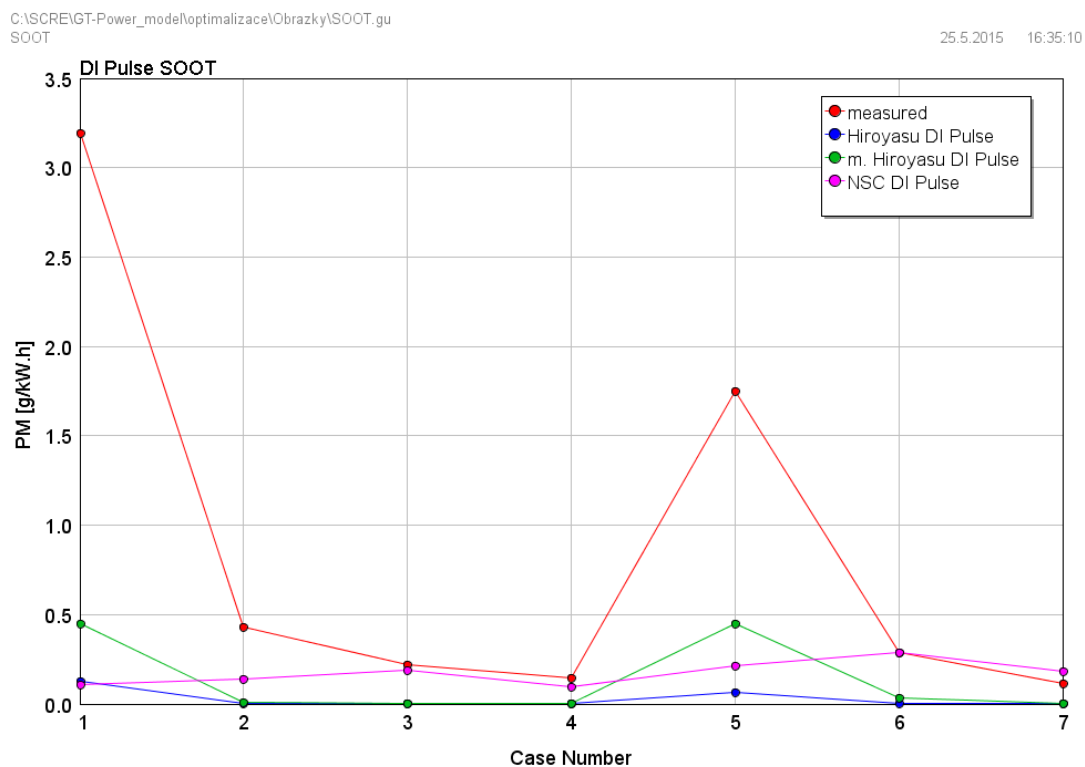
f: Průběh naměřených (measured) a vypočtených (simulated) emisí oxidů dusíku – DI Jet.



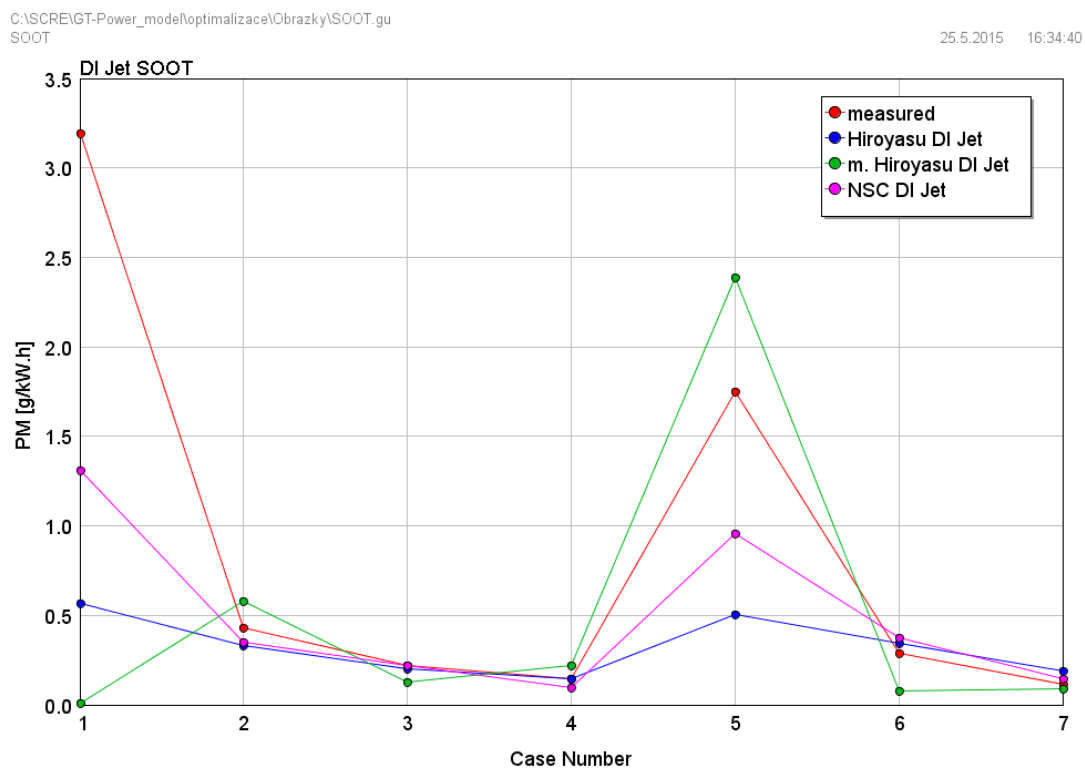
g: Normalizovaná odchylka naměřených a vypočtených emisí oxidů dusíku – DI Jet.

Obr. H.2.2: Průběhy minimalizovaného absolutního rozdílu tlaku a emisí oxidů dusíku pro atmosférický režim – TPA, DI Pulse a DI Jet (doplňk).

I Modely tvorby a oxidace sazí

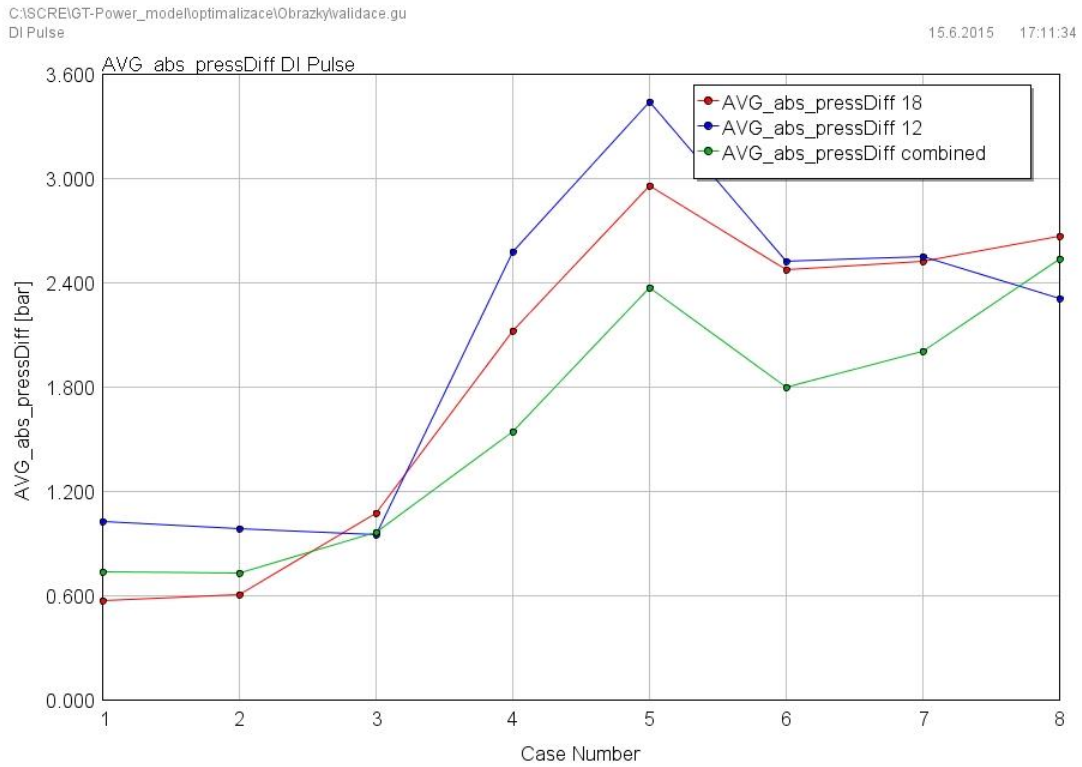


Obr. I.1: Přehled predikovaného množství sazí dle jednotlivých modelů, DI Pulse.

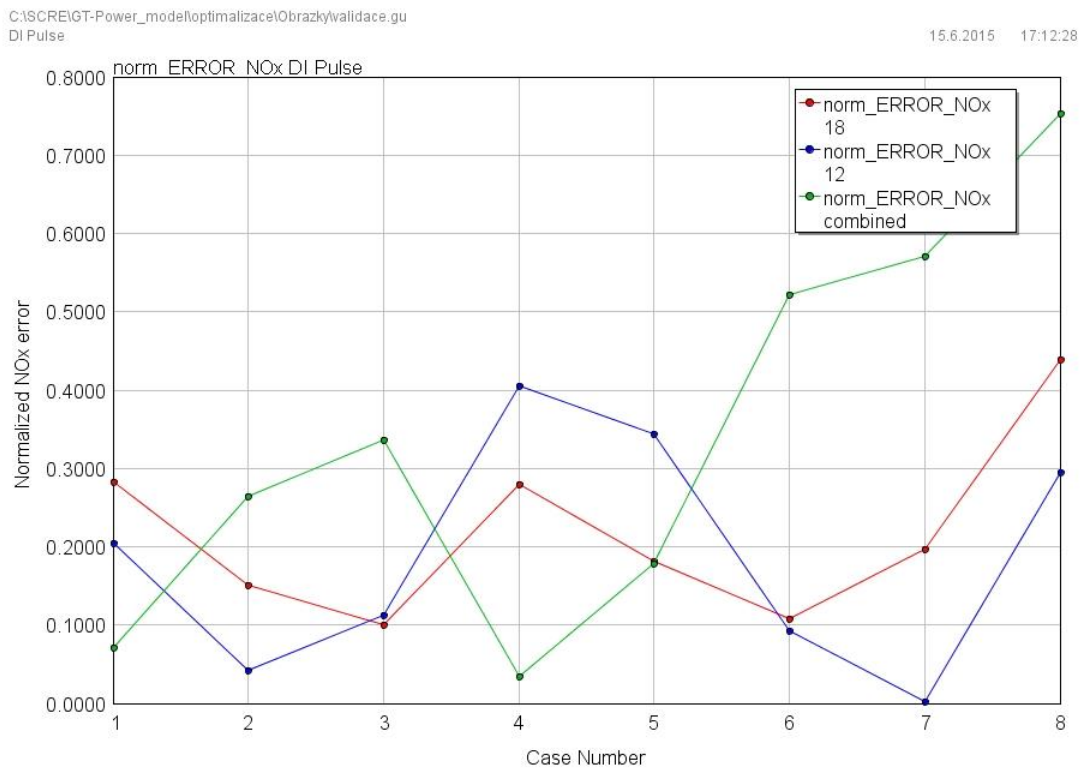


Obr. I.2: Přehled predikovaného množství sazí dle jednotlivých modelů, DI Jet.

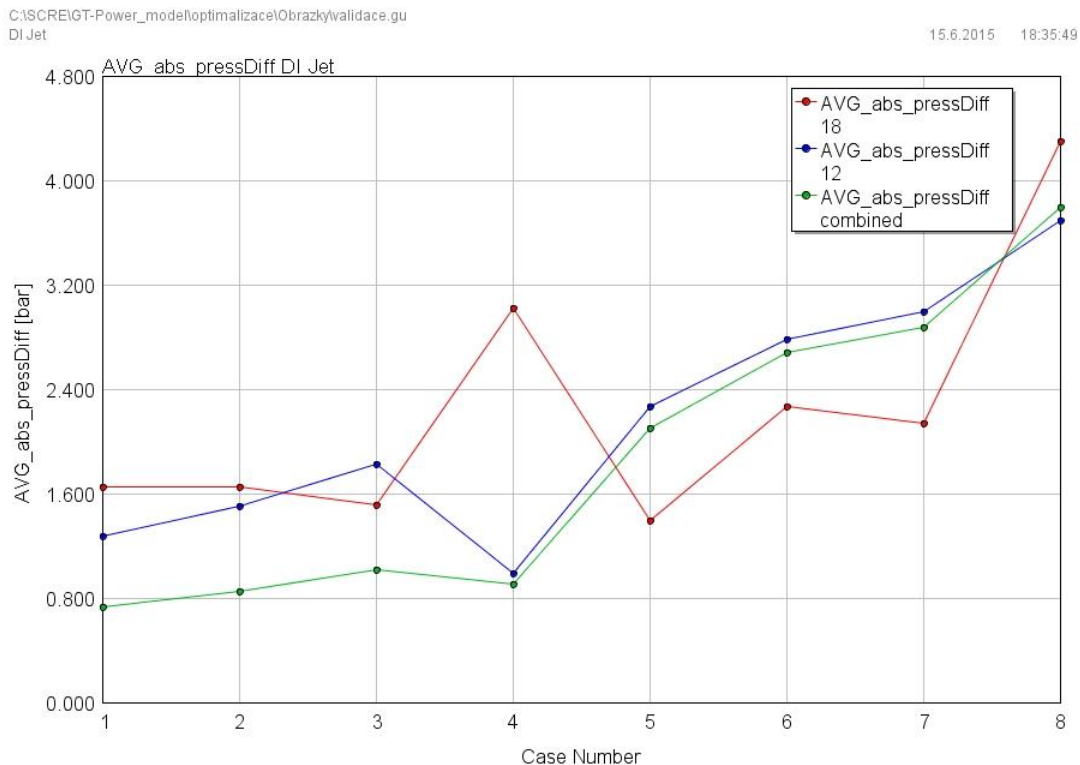
J Validace prediktivních schopností modelů



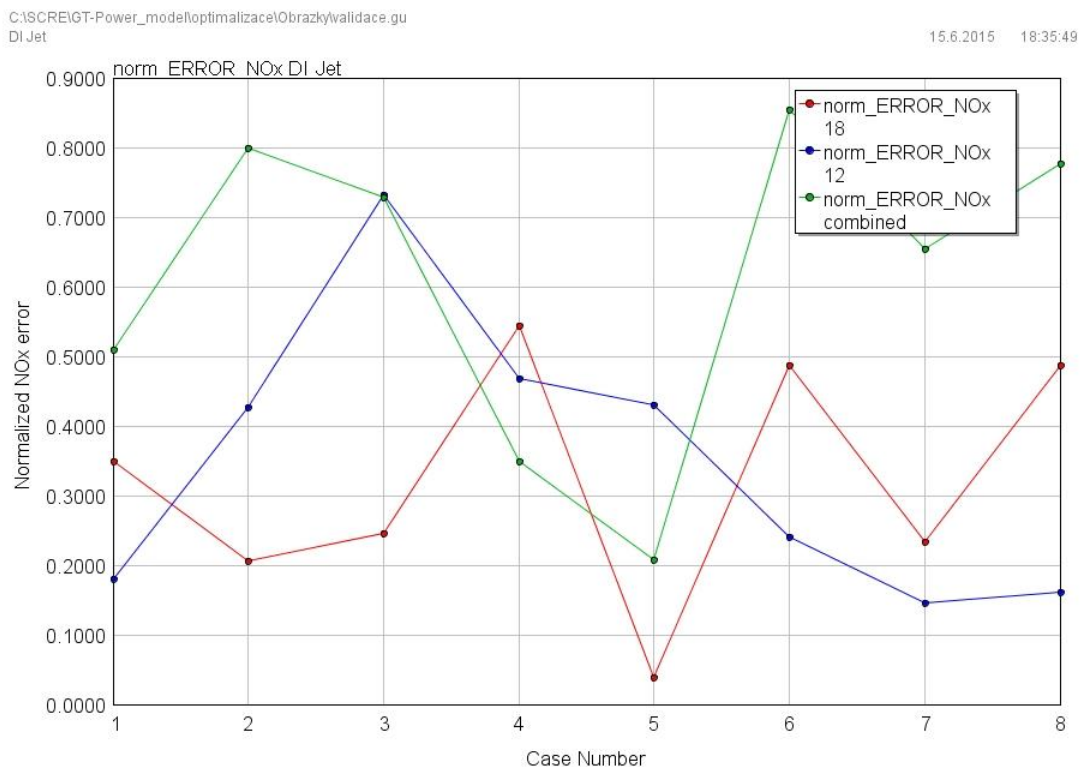
Obr. J.1: Průměrná absolutního odchyka tlaku ve válci – DI Pulse.



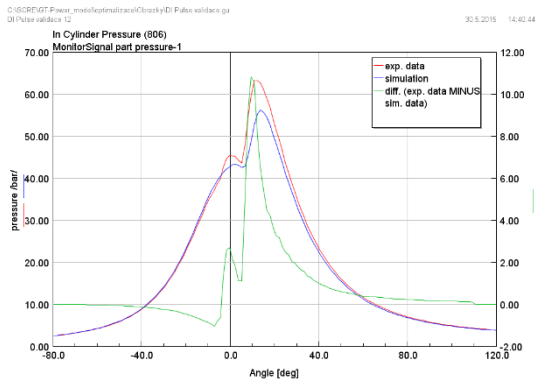
Obr. J.2: Průměrná normalizovaná odchyka množství NO_x – DI Pulse.



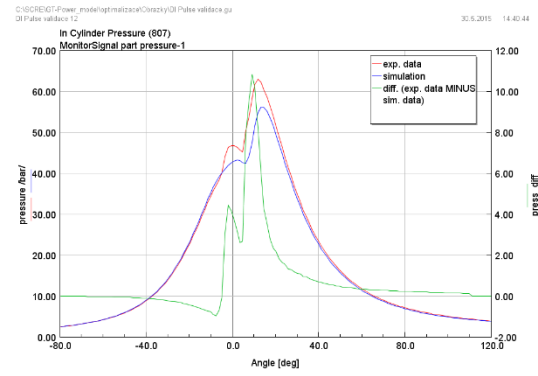
Obr. J.3: Průměrná absolutního odchylka tlaku ve válci – DI Jet.



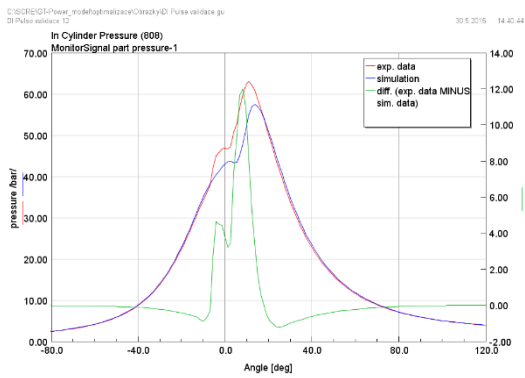
Obr. J.4: Průměrná normalizovaná odchylka množství NO_x – DI Jet.



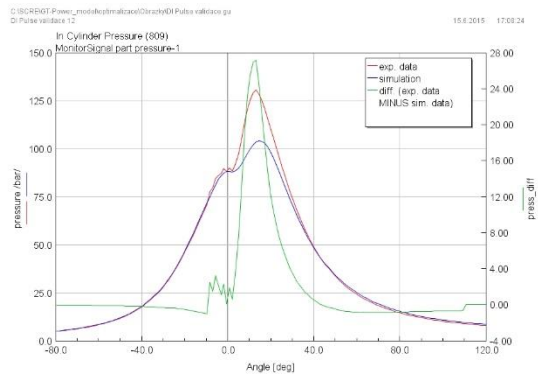
a: #806 (bod 1).



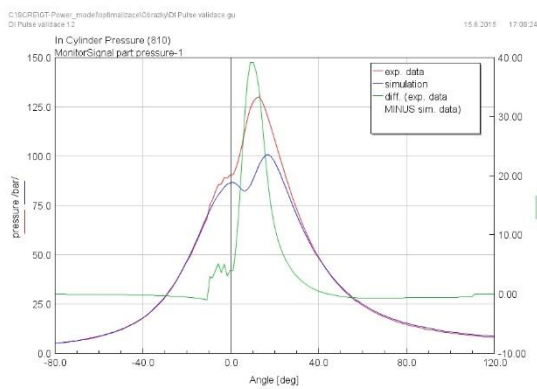
b: #807 (bod 2).



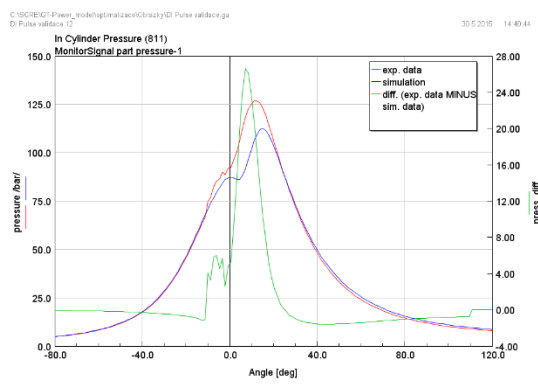
c: #808 (bod 3).



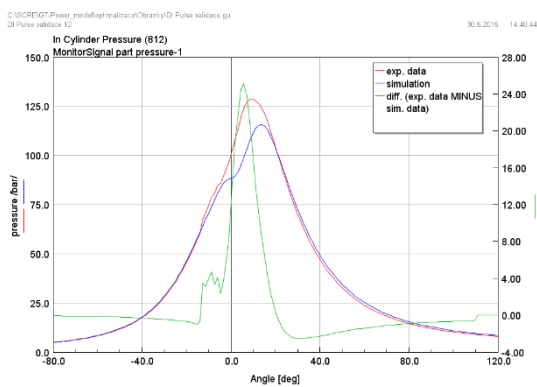
d: #809 (bod 4).



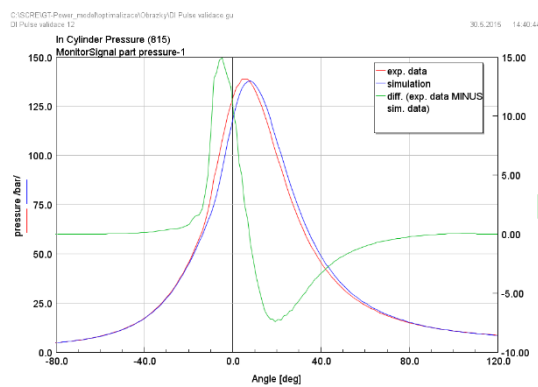
e: #810 (bod 5).



f: #811 (bod 6).

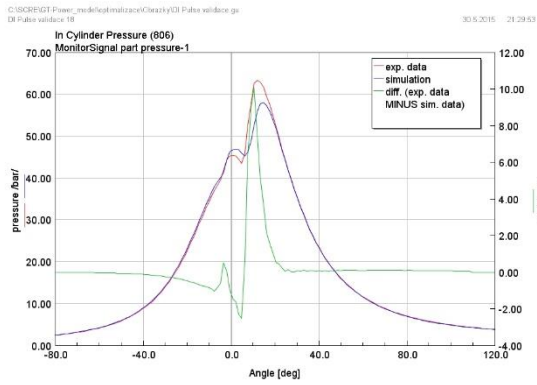


g: #812 (bod 7).

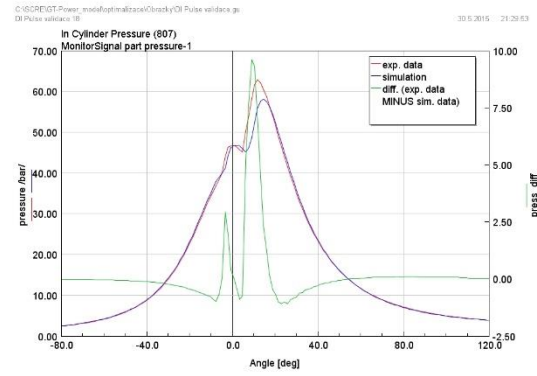


h: #815 (bod 8).

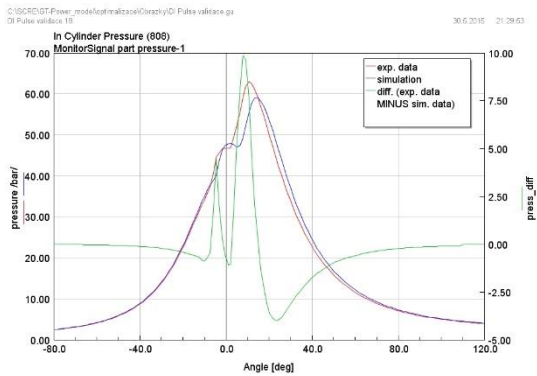
Obr. J.5: Průběhy tlaku ve válci – DI Pulse, kalibrováno v atmosférickém režimu.



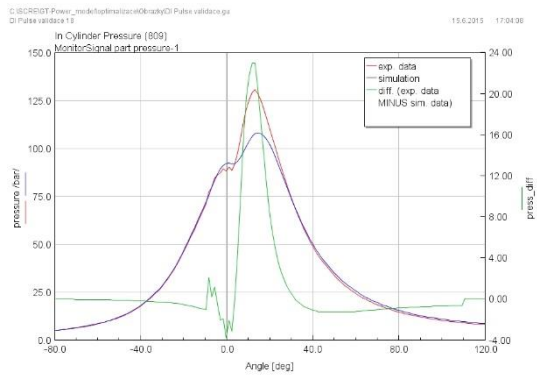
a: #806 (bod 1).



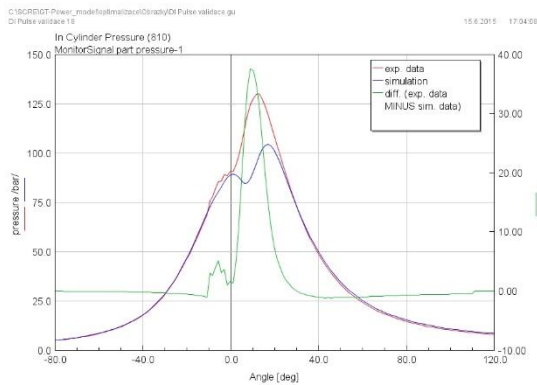
b: #807 (bod 2).



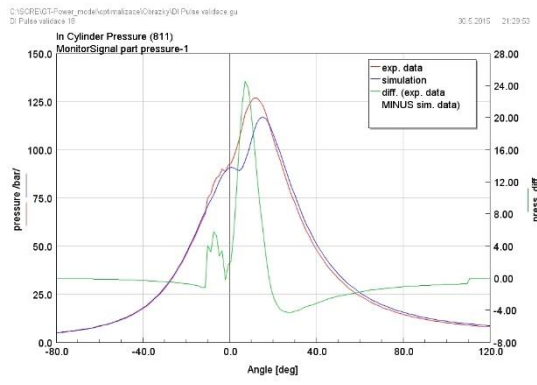
c: #808 (bod 3).



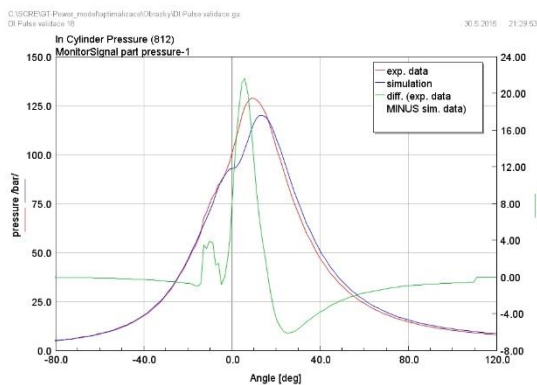
d: #809 (bod 4).



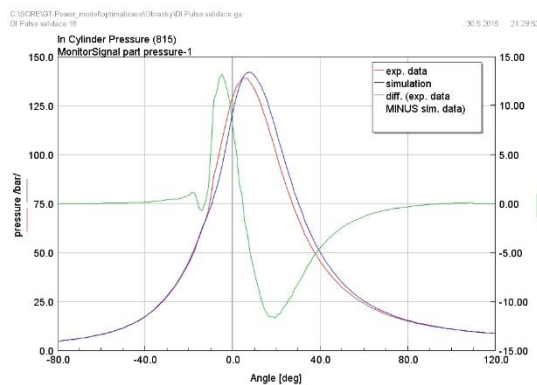
e: #810 (bod 5).



f: #811 (bod 6).

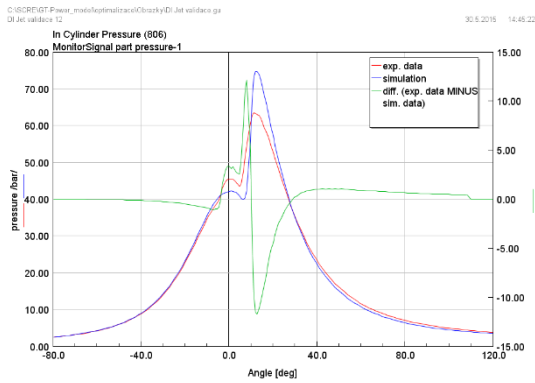


g: #812 (bod 7).

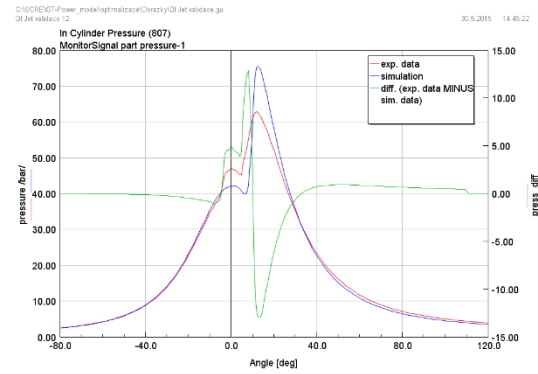


h: #815 (bod 8).

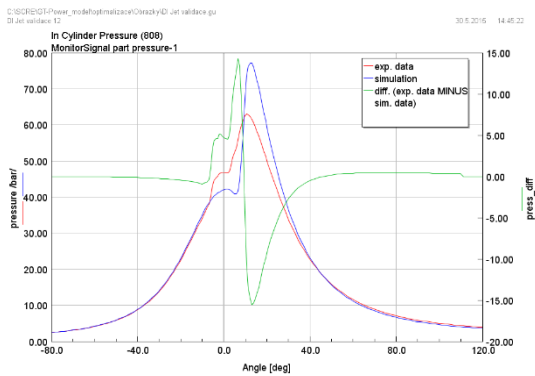
Obr. J.6: Průběhy tlaku ve válci – DI Pulse, kalibrováno v přepřínávaném režimu.



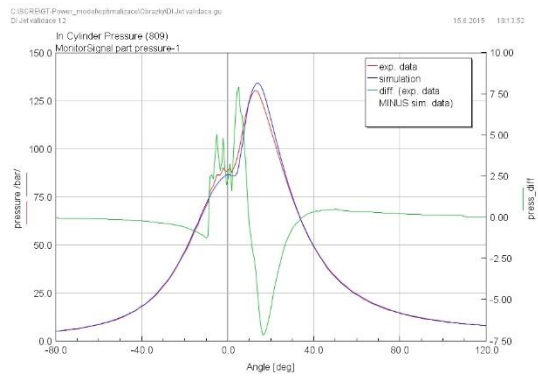
a: #806 (bod 1).



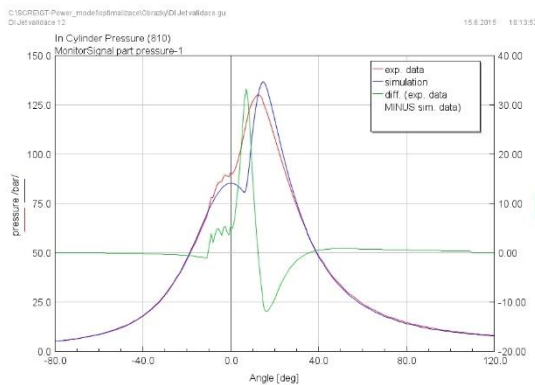
b: #807 (bod 2).



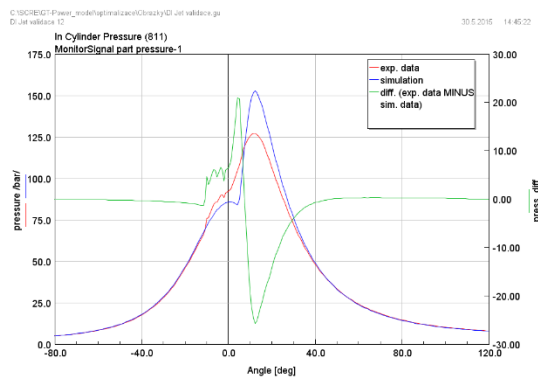
c: #808 (bod 3).



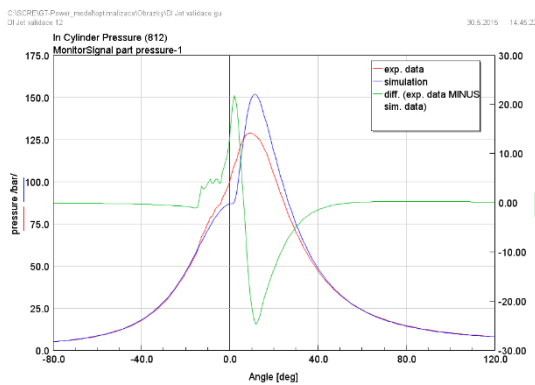
d: #809 (bod 4).



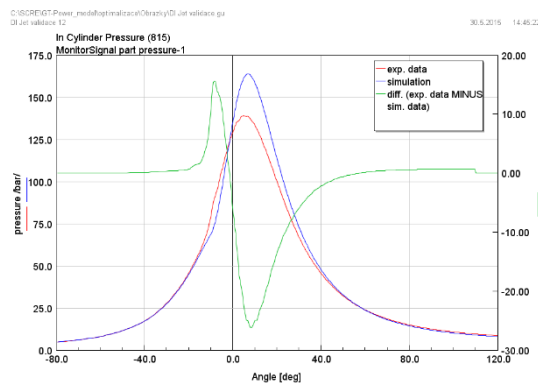
e: #810 (bod 5).



f: #811 (bod 6).

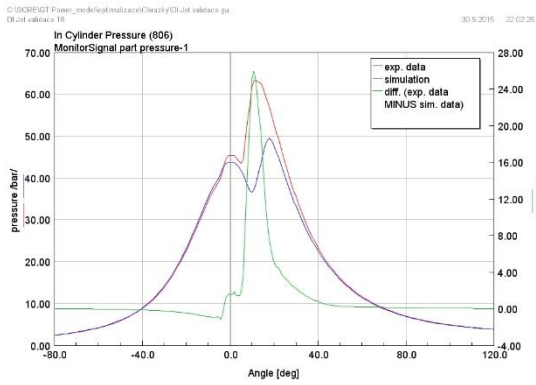


g: #812 (bod 7).

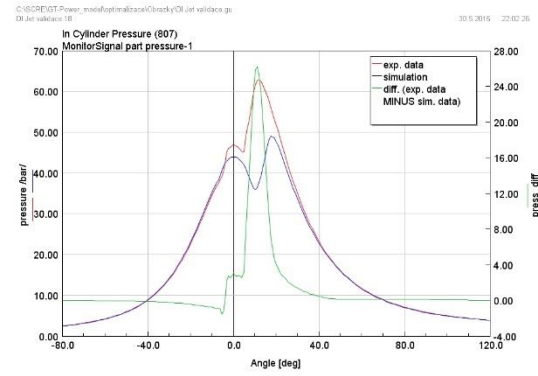


h: #815 (bod 8).

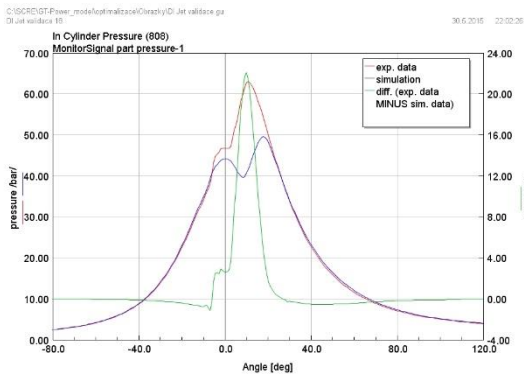
Obr. J.7: Průběhy tlaku ve válci – DI Jet, kalibrováno v atmosférickém režimu.



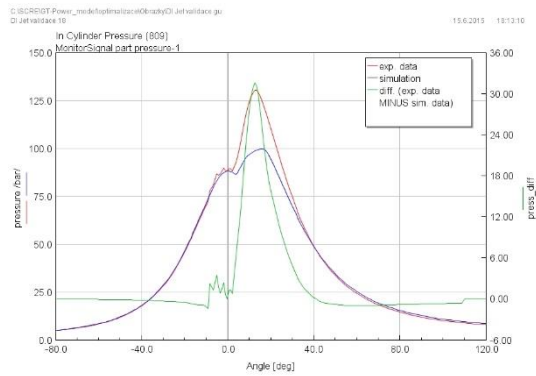
a: #806 (bod 1).



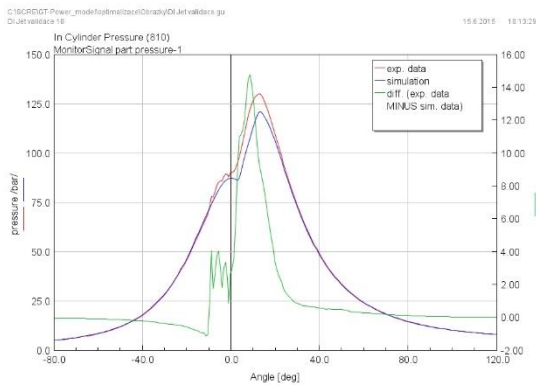
b: #807 (bod 2).



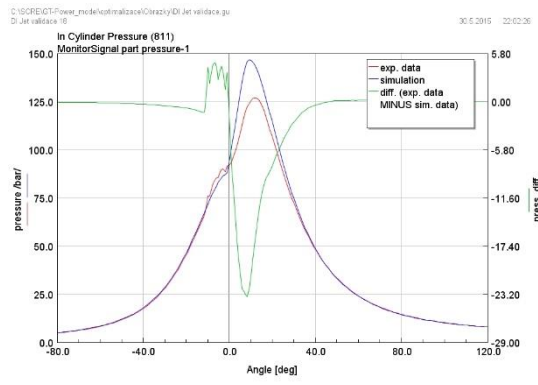
c: #808 (bod 3).



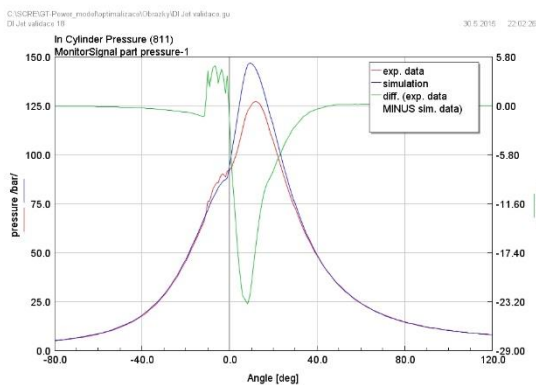
d: #809 (bod 4).



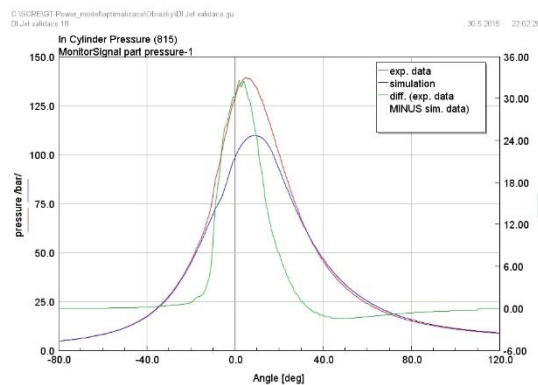
e: #810 (bod 5).



f: #811 (bod 6).

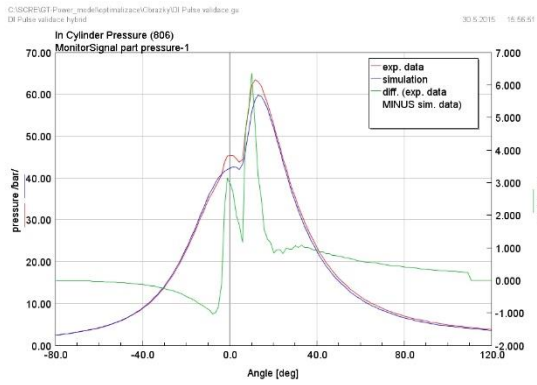


g: #812 (bod 7).

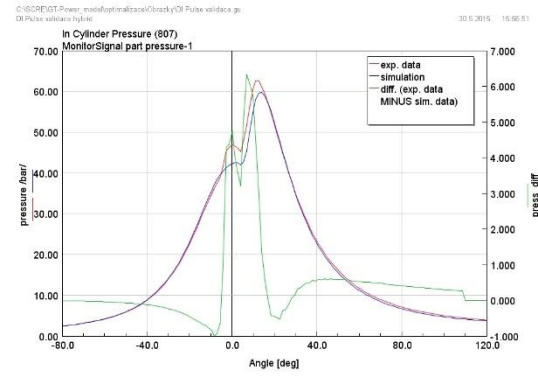


h: #815 (bod 8).

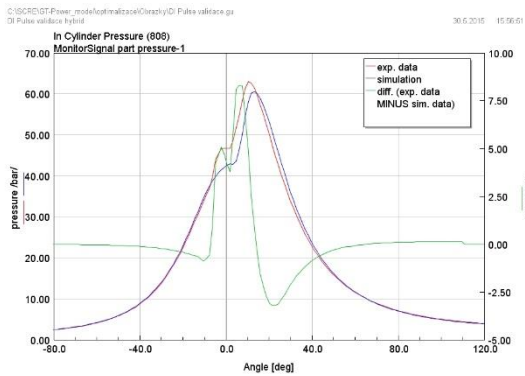
Obr. J.8: Průběhy tlaku ve válci – DI Jet, kalibrováno v přeplňovaném režimu.



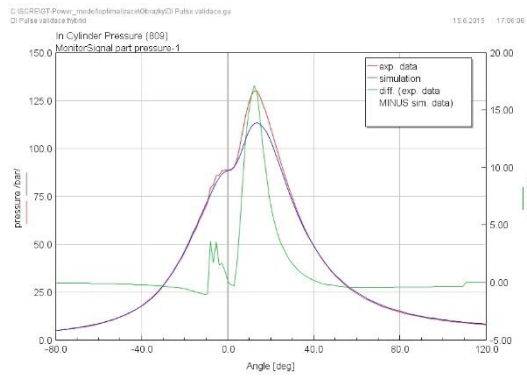
a: #806 (bod 1).



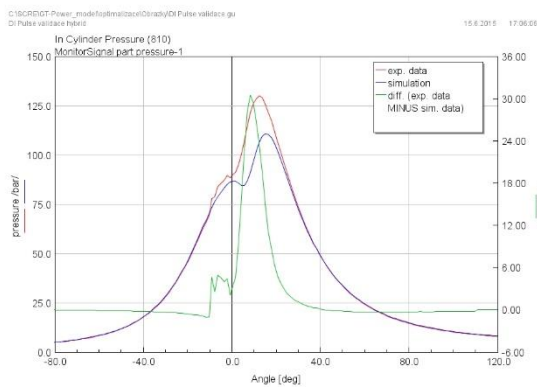
b: #807 (bod 2).



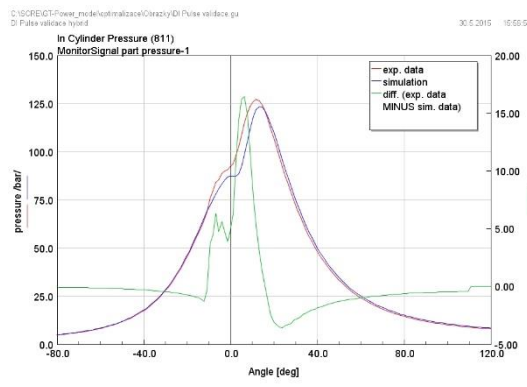
c: #808 (bod 3).



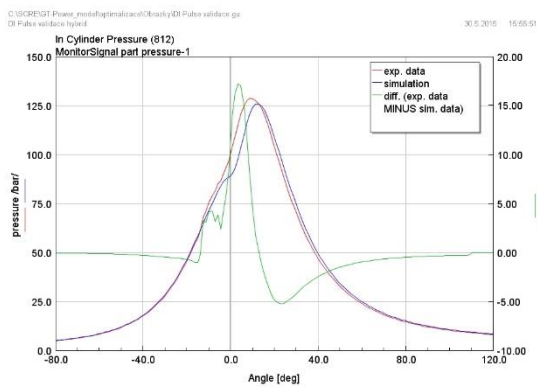
d: #809 (bod 4).



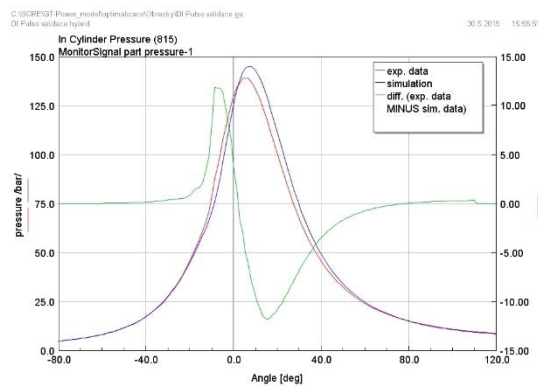
e: #810 (bod 5).



f: #811 (bod 6).

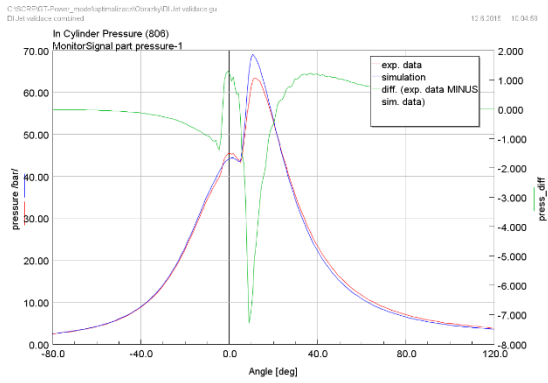


g: #812 (bod 7).

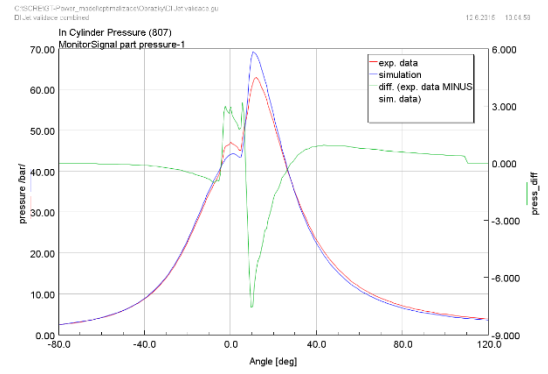


h: #815 (bod 8).

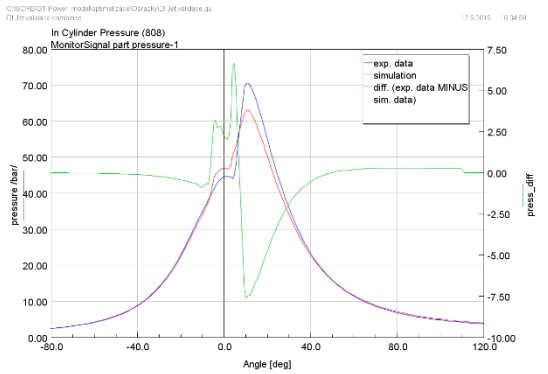
Obr. J.9: Průběhy tlaku ve válci – DI Pulse, kalibrováno v kombinovaném režimu.



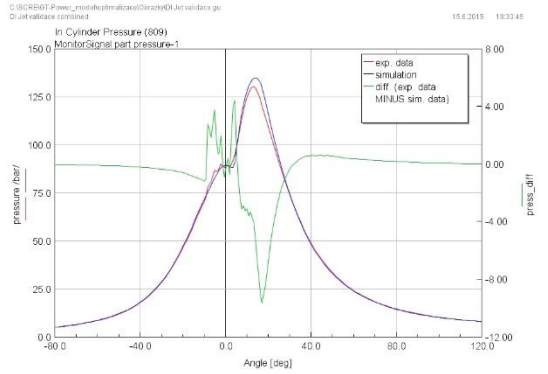
a: #806 (bod 1).



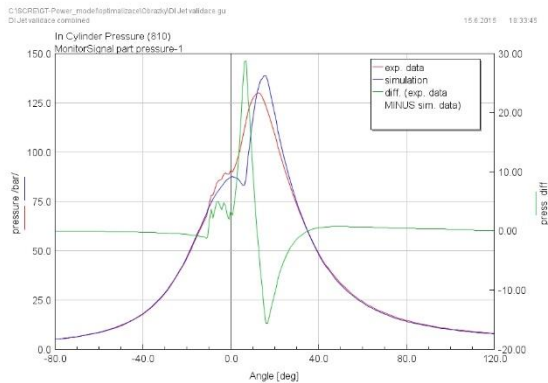
b: #807 (bod 2).



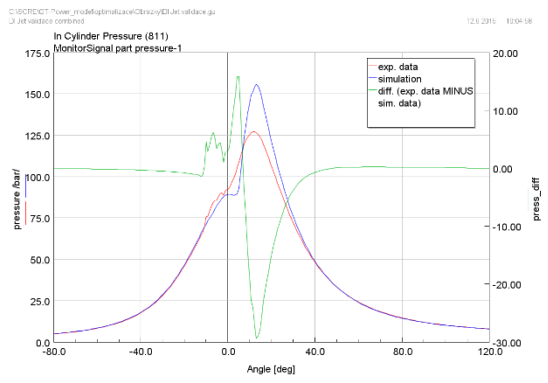
c: #808 (bod 3).



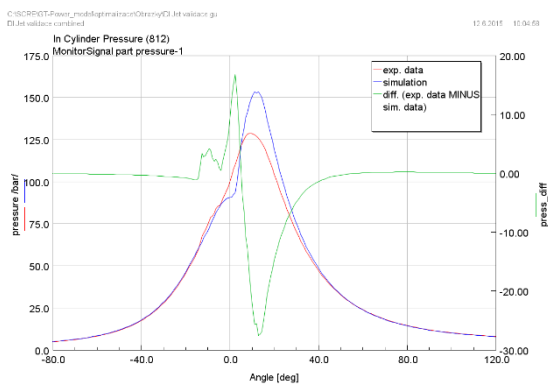
d: #809 (bod 4).



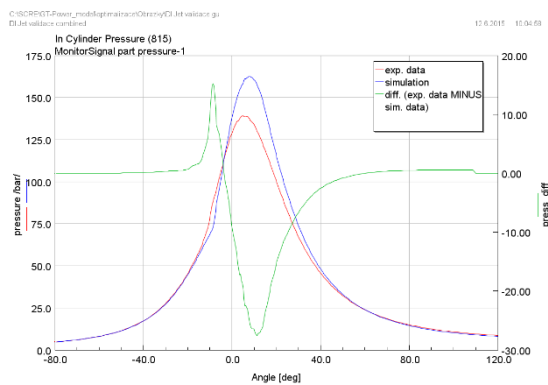
e: #810 (bod 5).



f: #811 (bod 6).

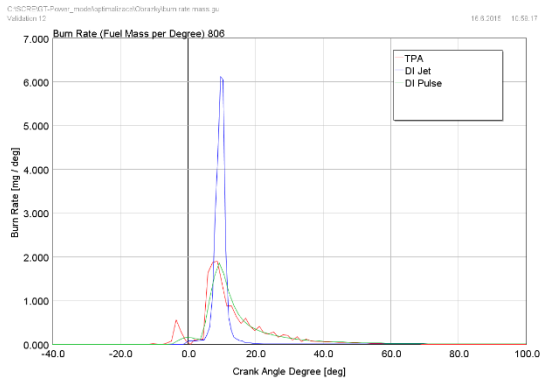


g: #812 (bod 7).

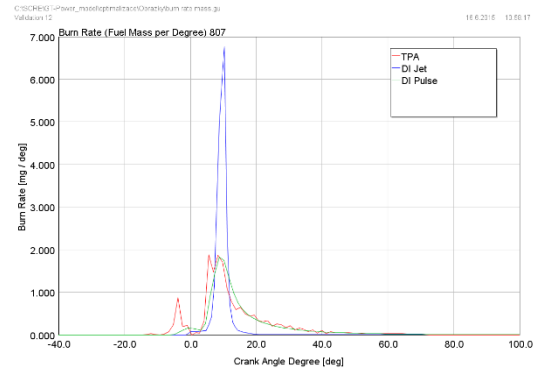


h: #815 (bod 8).

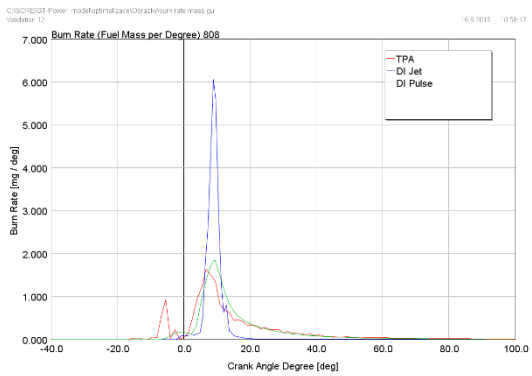
Obr. J.10: Průběhy tlaku ve válci – DI Jet, kalibrováno v kombinovaném režimu.



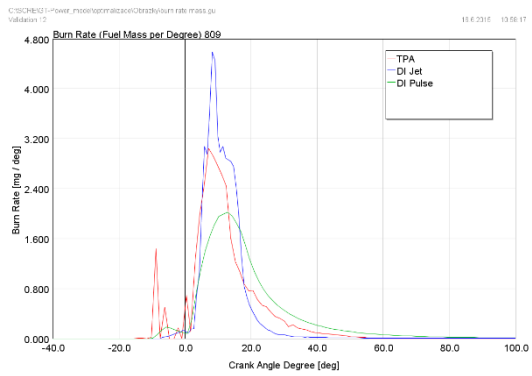
a: #806 (bod 1).



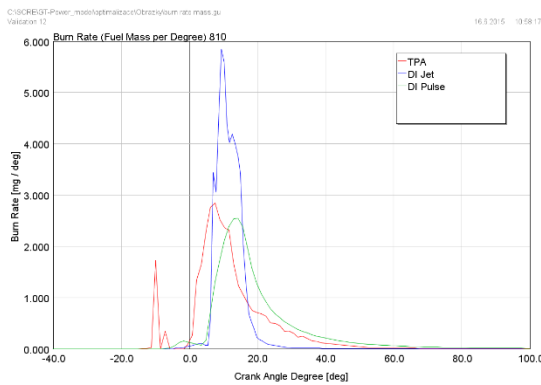
b: #807 (bod 2).



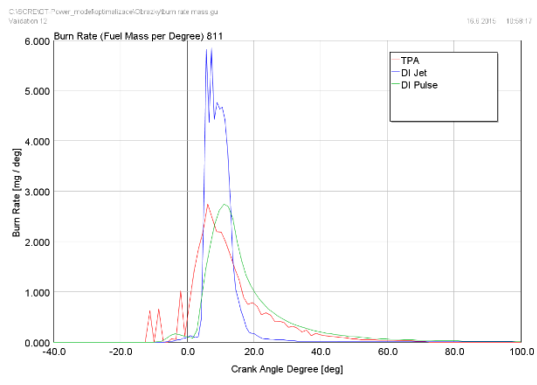
c: #808 (bod 3).



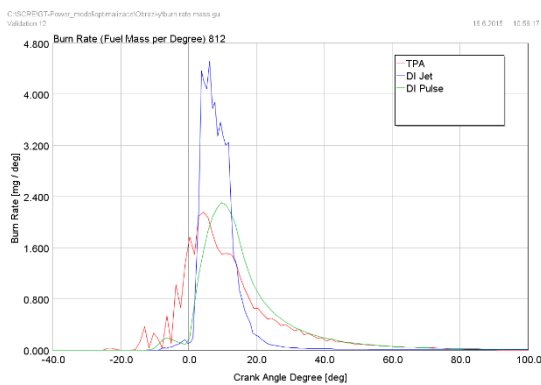
d: #809 (bod 4).



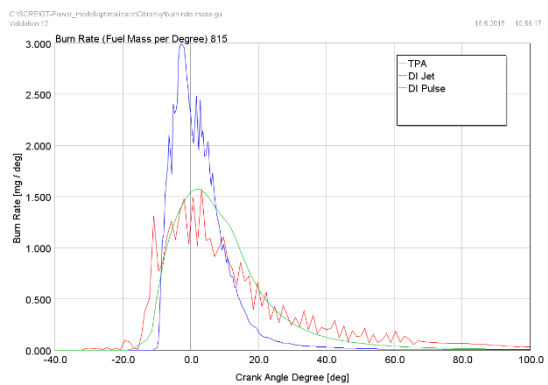
e: #810 (bod 5).



f: #811 (bod 6).

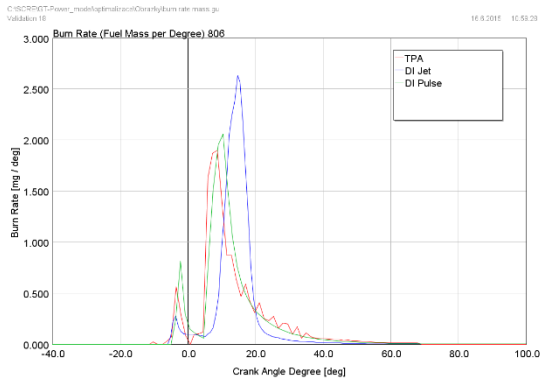


g: #812 (bod 7).

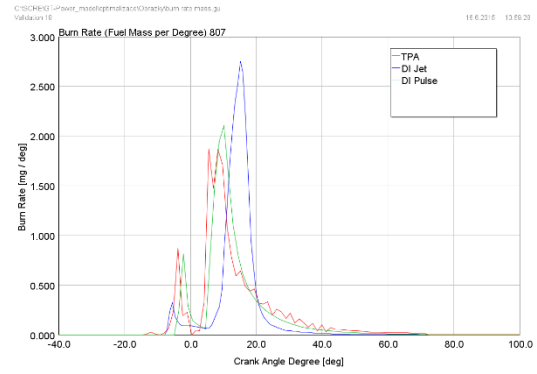


h: #815 (bod 8).

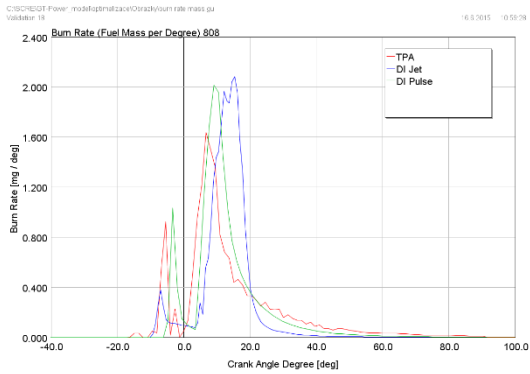
Obr. J.11: Rychlost hoření – naměřená, DI Jet a DI Pulse; atmosférický režim.



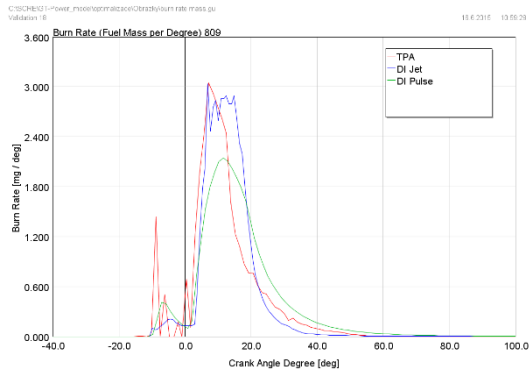
a: #806 (bod 1).



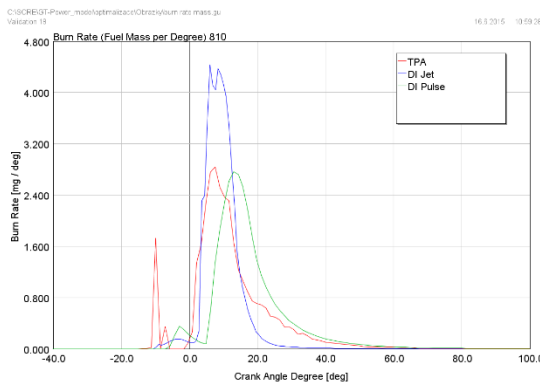
b: #807 (bod 2).



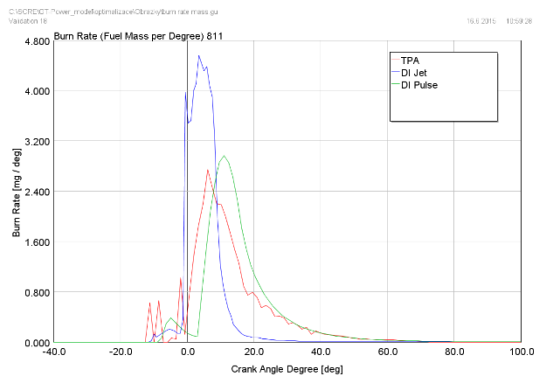
c: #808 (bod 3).



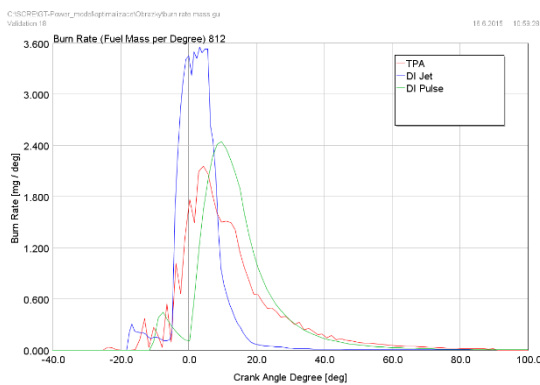
d: #809 (bod 4).



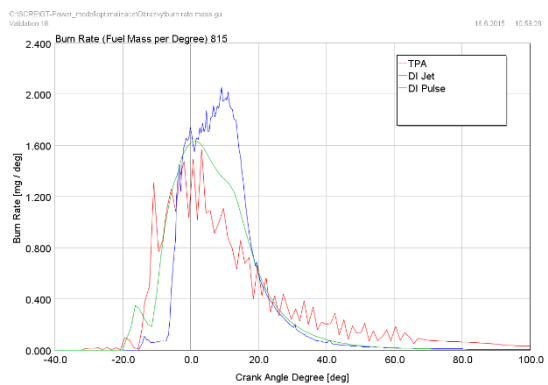
e: #810 (bod 5).



f: #811 (bod 6).

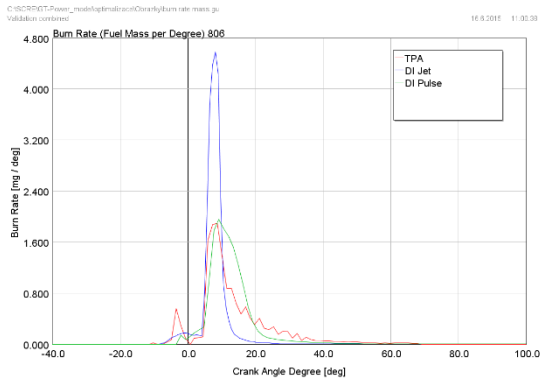


g: #812 (bod 7).

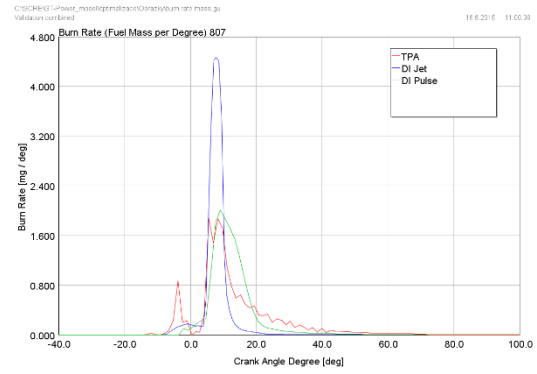


h: #815 (bod 8).

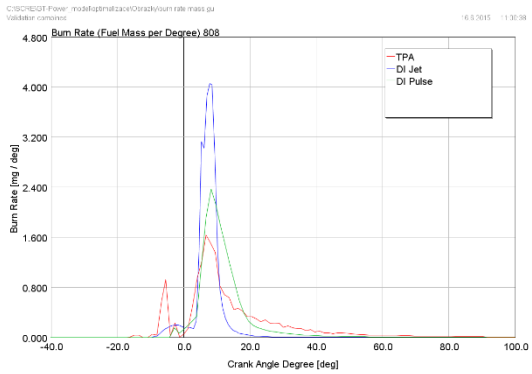
Obr. J.12: Rychlost hoření – naměřená, DI Jet a DI Pulse; přepřňovaný režim.



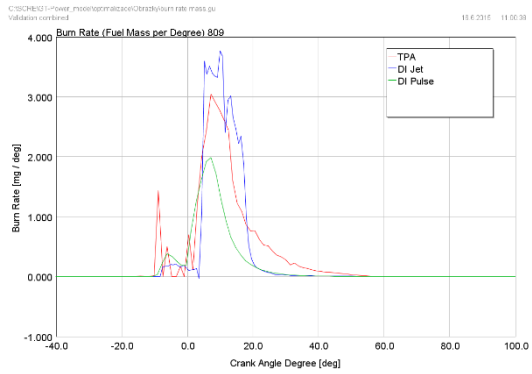
a: #806 (bod 1).



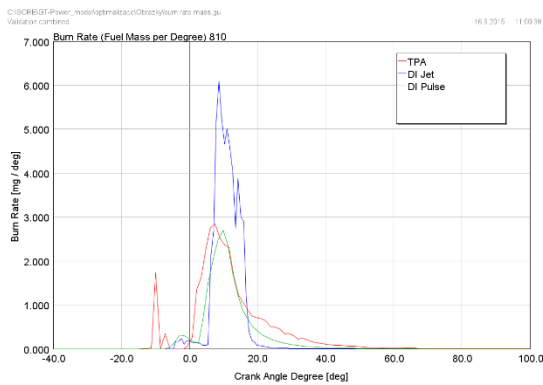
b: #807 (bod 2).



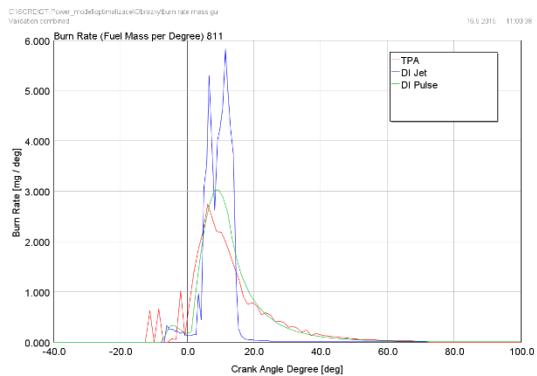
c: #808 (bod 3).



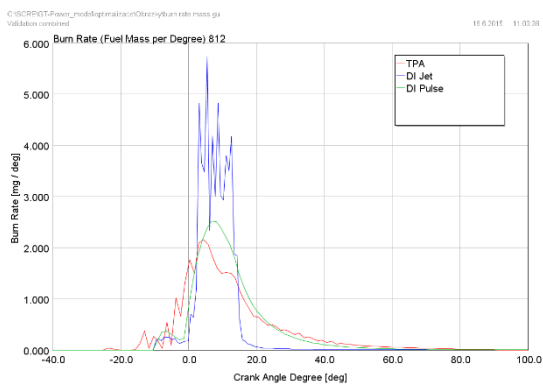
d: #809 (bod 4).



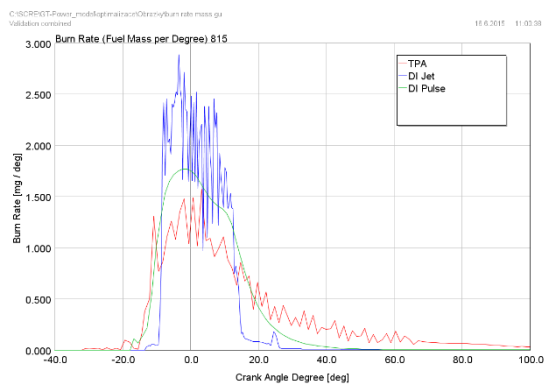
e: #810 (bod 5).



f: #811 (bod 6).



g: #812 (bod 7).



h: #815 (bod 8).

Obr. J.13: Rychlost hoření – naměřená, DI Jet a DI Pulse; kombinovaný režim.