Mystery #5 of Interpolation Method(IPM)

<<Previous Discussion>>

Mystery #5 ; Huge Error when adjust $f_{1,L}$ to $f_{1,H}$

3.2.3.2.2.4. Calculation of road load for individual vehicles

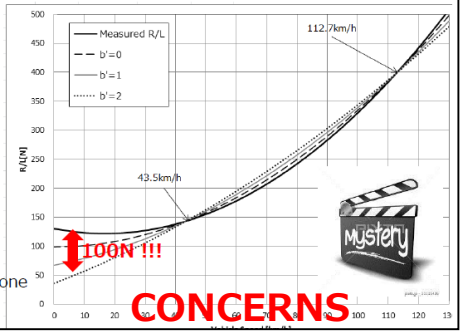
Possible f_1 variability of same type of vehicle configurations

Model	A	B	C	D	E	F	G	F
AVE	0.3958	0.2974	0.1847	-0.2831	-0.0146	-0.1222	0.2906	0.8777
MAX	0.5976	0.4073	0.3185	0.0198	0.3117	0.2539	0.9802	1.0563
MIN	0.2013	0.0730	-0.0304	-0.5555	-0.1587	-0.4968	-0.0001	0.5113
MAX-MIN	0.3963	0.3343	0.3489	0.5753	0.4704	0.7507	0.9803	0.5450
σ	0.1545	0.1400	0.1499	0.2376	0.2191	0.3108	0.4621	0.2475
3σ片側	0.4635	0.4201	0.4496	0.7127	0.6574	0.9324	1.3863	0.7426
±3σ両側	0.9269	0.8403	0.8992	1.4254	1.3147	1.8648	2.7726	1.4853

case study

R/L	measured R/L	b'=0	b'=1	b'=2
$f_{2,L}$ a=	0.03000	0.02360	0.01720	0.01080
$f_{1,L}$ b=	1.0000	0.0000	1.0000	2.0000
$f_{0,L}$ c=	130.0	98.63	67.3	35.9

$= f_{1,H}$



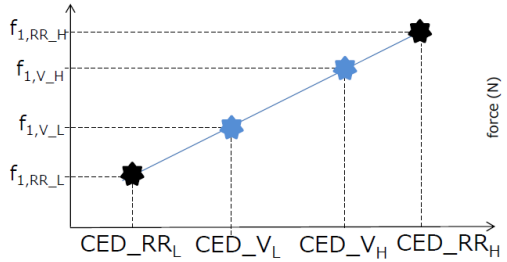
However, cycle energy demand is almost identical to original one

→ calculated individual vehicle CO_2 is OK. **BUT ....**

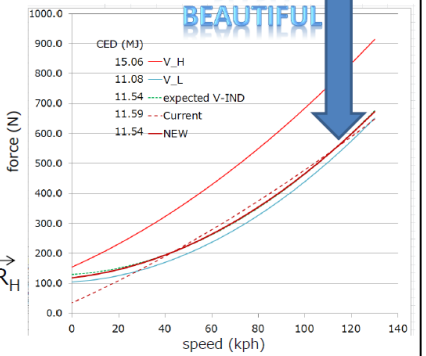
IPM procedure has a possibility to derive unrepresentative road load curve profile which may cause unrepresentative test results.

SOLUTION

$$f_{1,V\_H\ or\ L} = \frac{(CED\_V_{H\ or\ L} - CED\_RR_L) * f_{1,RR\_H} + (CED\_RR_H - CED\_V_{H\ or\ L}) * f_{1,RR\_L}}{(CED\_RR_H - CED\_RR_L)}$$



SO SO BEAUTIFUL



Comments by IWG member

comments	answers
makes GTR more complicated	NO, not at all (please refer WLTP-23-06e_Appendix11)
magnitudes of mystery#5	(refer next slide)
V_{ind} testing for ISC	Application information should be based on proposed coefficient. (i.e. CoC info.)
should avoid “cherry picking”	no preference, follow IWG decision
previous test results may become invalid	same as other issues

Magnitude of Mystery#5 (on the desk study)