



DELTA

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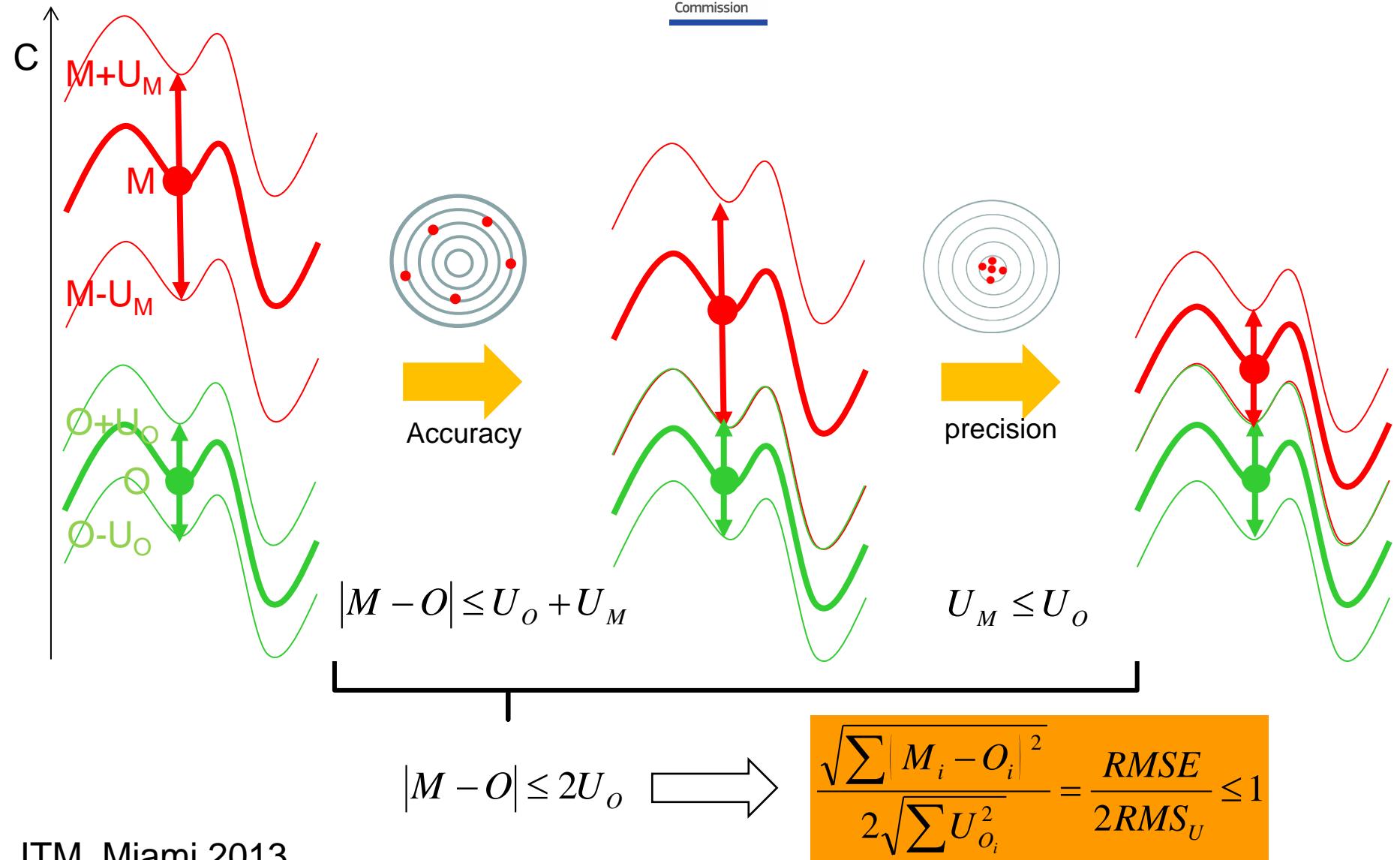
Outline

➤ *DELTA V3.5 & 3.6*

- **Model Performance Criteria diagrams (hourly/daily)**
- **Geo-Map: a “Target companion”**
- **Input management (`myinput.dat`)**
- **Additional MQO**
- **Others (Display, Cumul...)**

➤ *Towards V4.0*

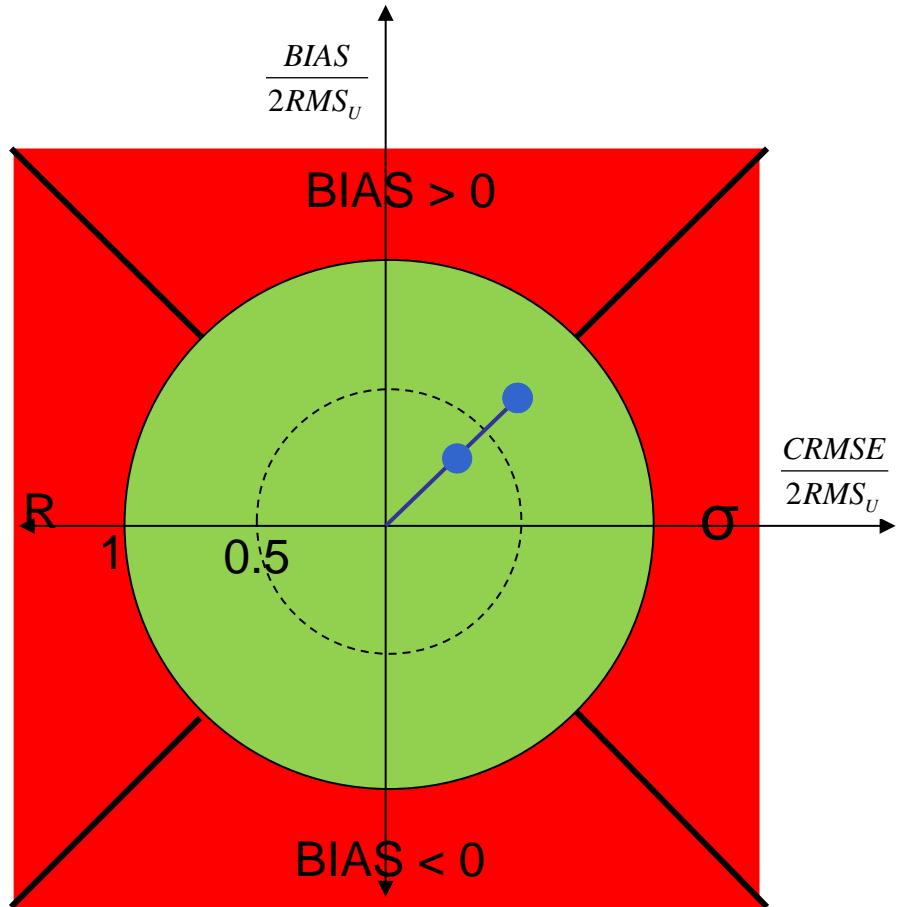
Evaluation methodology: Observation uncertainty based MQO



Geo-Map: a Target companion



$$\frac{RMSE^2}{(2RMS_U)^2} = \frac{BIAS^2}{(2RMS_U)^2} + \boxed{\frac{CRMSE^2}{(2RMS_U)^2}}$$



$\frac{RMSE}{2RMS_U}$ = distance from origin

$\frac{RMSE}{2RMS_U} \leq 1 \rightarrow$ No significant diff between mod and obs
 $CRMSE^2 = |\sigma_M - \sigma_O|^2 - 2\sigma_M\sigma_O(1-R)$

$\frac{RMSE}{2RMS_U} \leq 0.5 \rightarrow$ Model is within meas. uncertainty

$\frac{RMSE}{2RMS_U} > 1 \rightarrow$ Significant diff. between MOD and OBS

$|BIAS| \geq CRMSE$

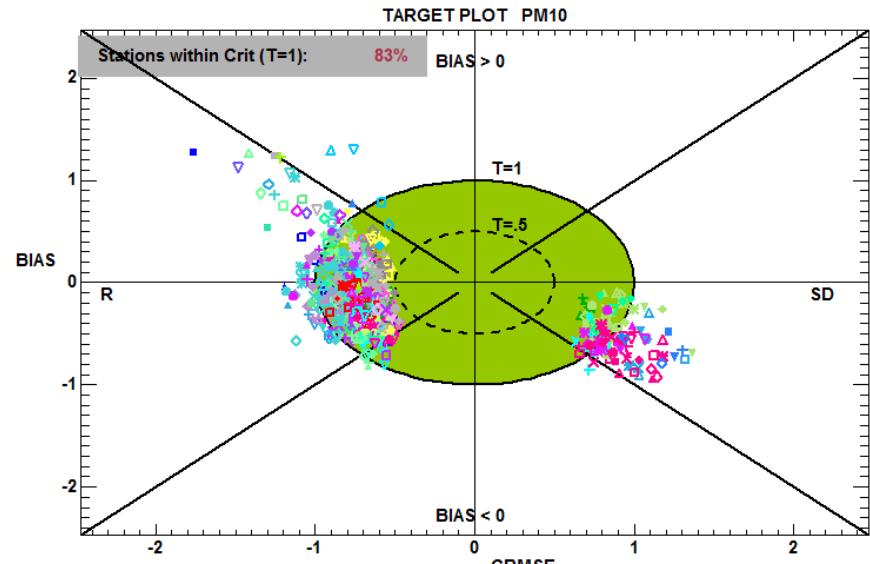
$CRMSE \geq |BIAS| \quad \& \quad \text{Error } (\sigma) > \text{Error } (R)$

$CRMSE \geq |BIAS| \quad \& \quad \text{Error } (R) > \text{Error } (\sigma)$

Geo-Map: a Target companion



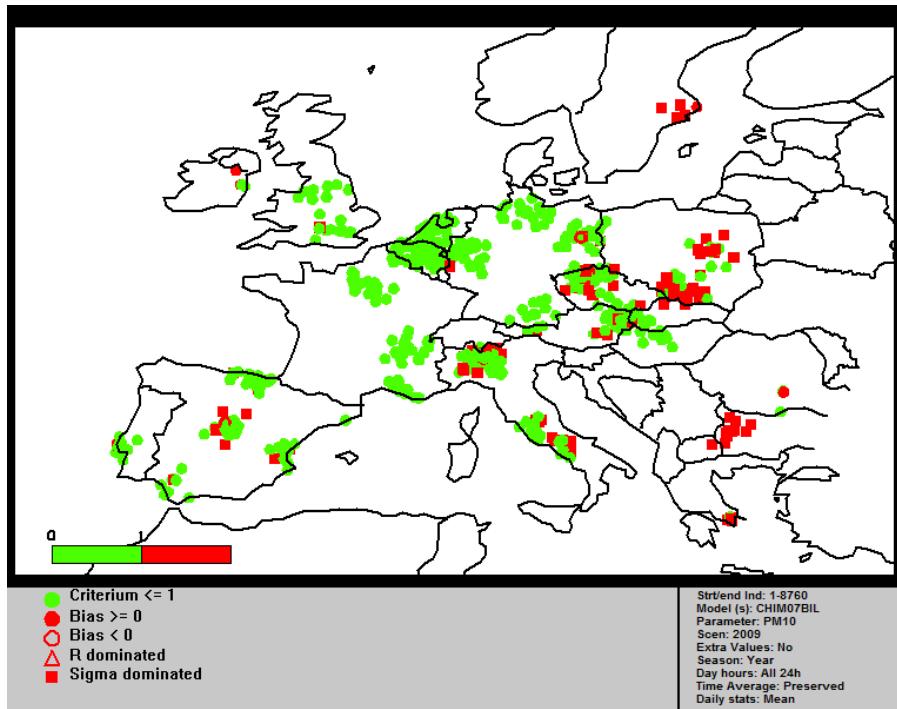
Target



- Illmitz
- Illmitz2
- Pillersdorfbe
- RiedimZillert
- EisenstadtLas
- Purkersdorf
- BadVaslaGain
- ForsthofamSch
- Hainburg
- Stixenreisdi
- Gansendorf
- Wolkersdorf
- Groaenzersdor
- Heidenreichst
- Klosternreubur
- Klosternreubur
- Himberg
- Ziersdorf
- Mistelbach
- Madling
- Traismauer
- Kremes
- LeobenGaa
- Zwentendorf
- LeobenZentrum
- Streithofenim
- NeusiedlmTul
- BruckanderMur
- MarzzuschlagR
- StPaltenEurop
- WienerNeustad
- TullnLeopoldg
- KufsteinPraxm
- WienWahringer
- Kapfenberg
- Mosenberg
- WienFloridsdo
- WienLobauGru
- WienTaborstra
- WienBelgradpl

Start/end Ind: 1-8760
Model (s): CHIM07BIL
Parameter: PM10
Scen: 2009
Extra Values: No
Season: Year
Day hours: All 24h
Time Average: Preserved
Daily stats: Mean

Geo-Map



Model Performance Criteria diagrams (hourly/daily)



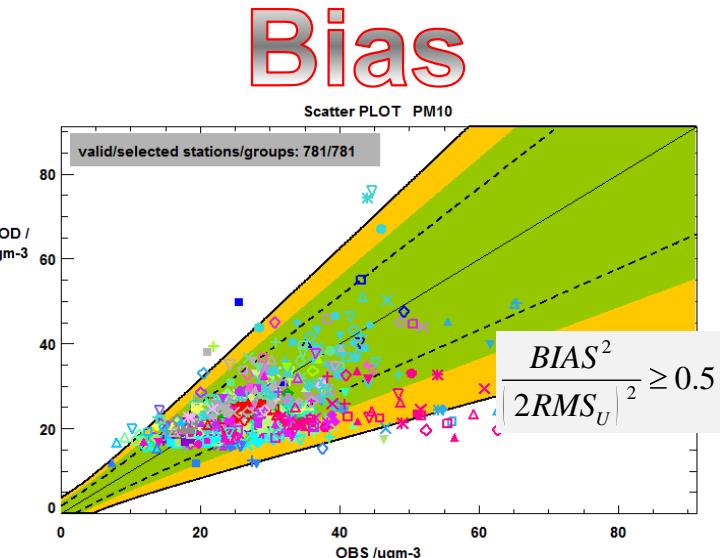
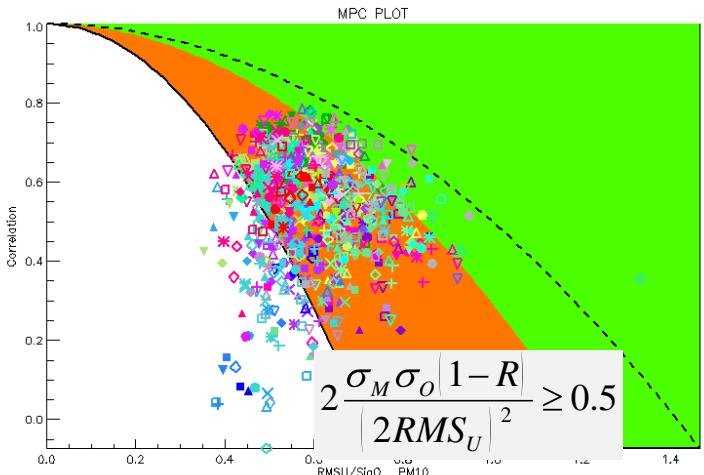
$$\frac{RMSE^2}{|2RMS_U|^2} = \frac{BIAS^2}{|2RMS_U|^2} + \frac{|\sigma_M - \sigma_O|^2}{|2RMS_U|^2} - 2 \frac{\sigma_M \sigma_O |1-R|}{|2RMS_U|^2}$$

Shaded Area (green or orange):

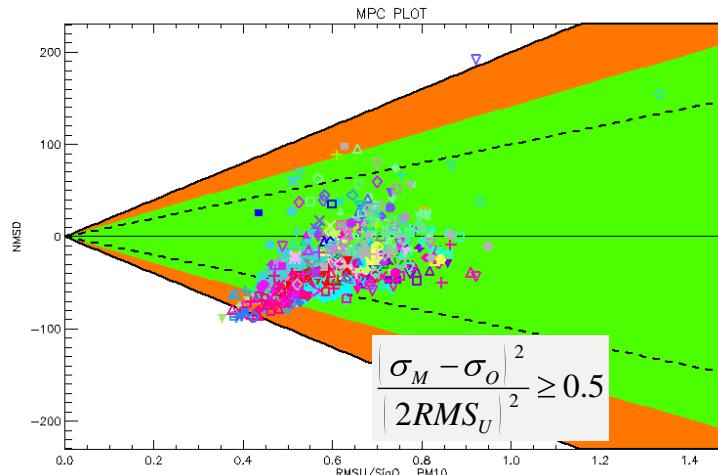
$$\frac{RMSE^2}{|2RMS_U|^2} \leq 1$$

Shaded Area (orange):

Correlation



Std. deviation



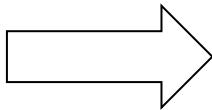
Input management



myDeltaInput.dat

startup_XXX.ini
modeling\XXX
monitoring\XXX

first line: startup
second line: modeling
third line: monitoring



Resource\startup_XXX.ini

Data → Modeling\ XXX

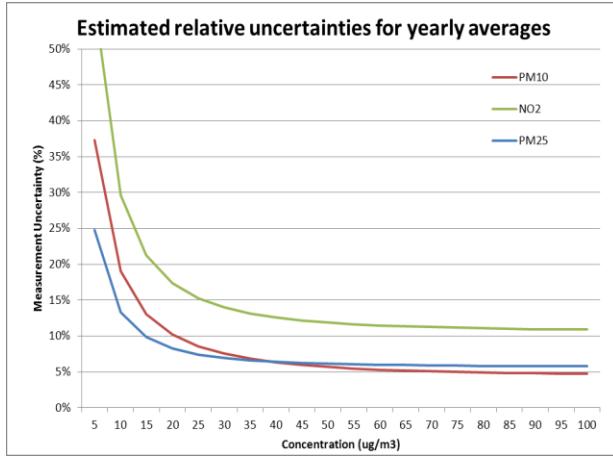
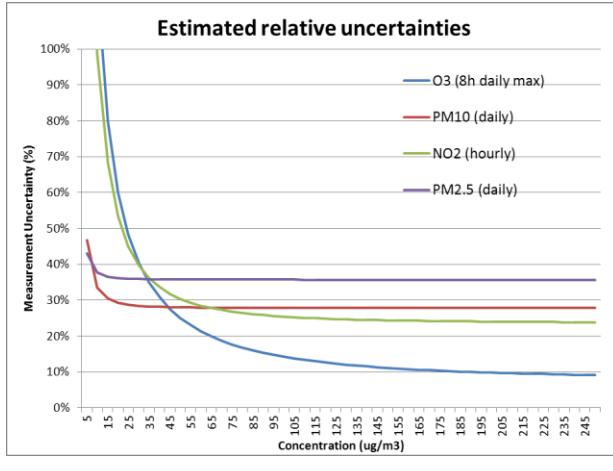
Monitoring\ XXX

Save

Help

...

Model quality objectives (MQO overview)



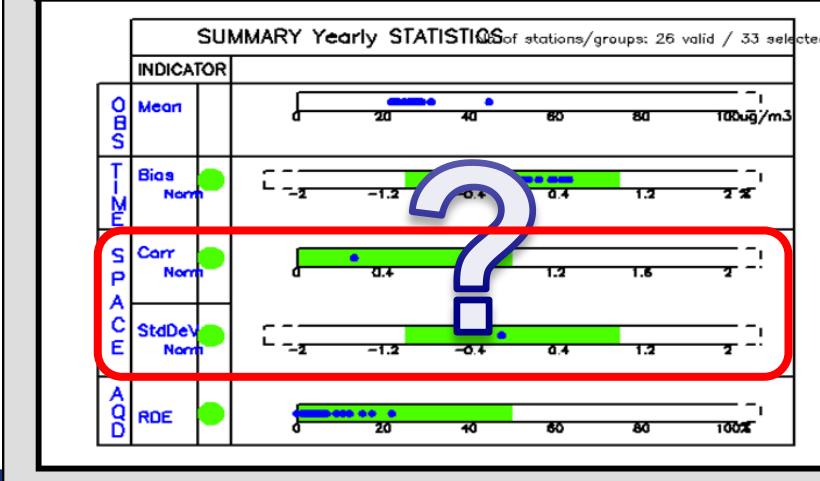
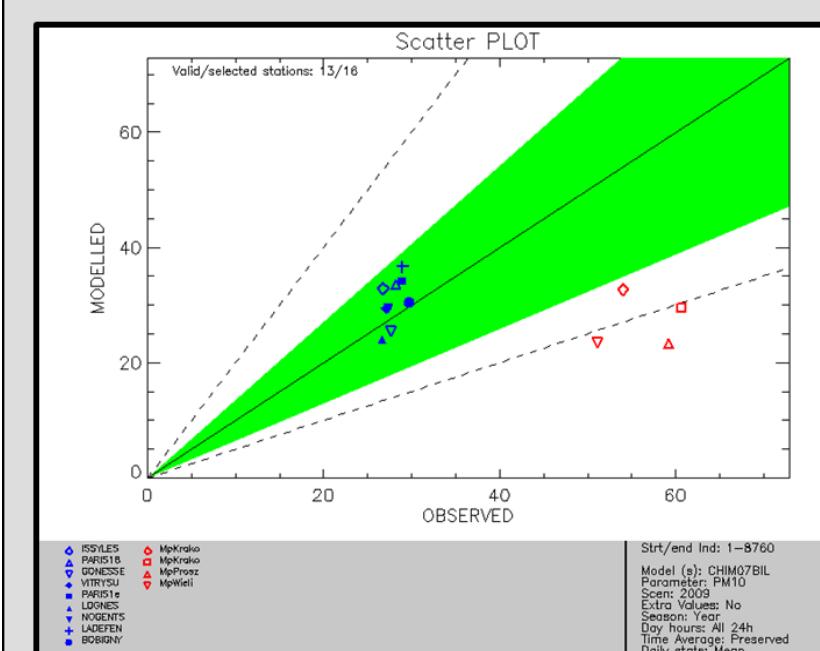
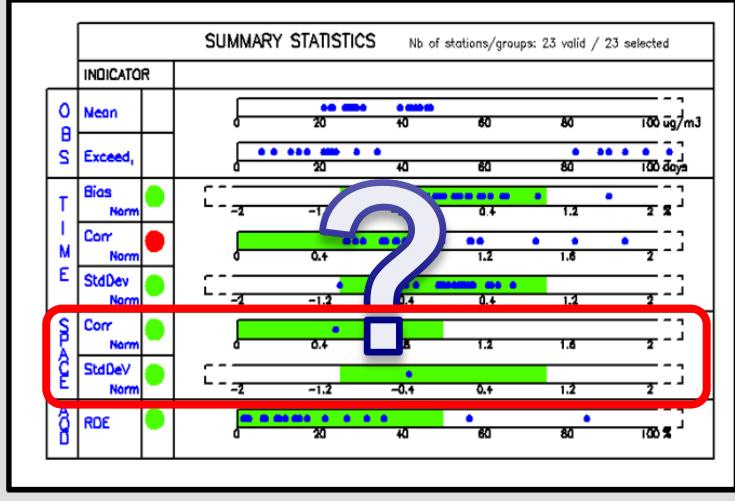
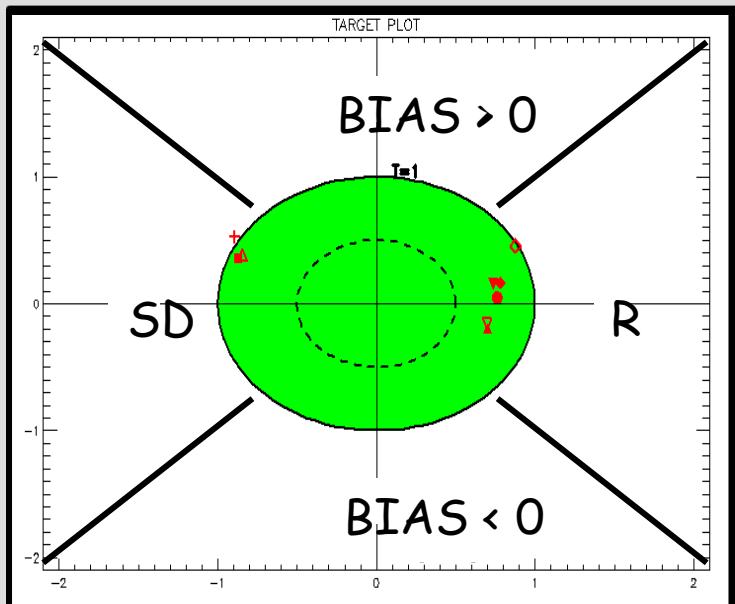
Species	Fixed	Measurement fit		Yearly values		
	k	RV	UrLV	alpha	Np	Nnp
O3	1.4	120	0.090	0.620		
PM10	2.0	50	0.140	0.018	40	1
NO2	2.0	200	0.120	0.040	5	12
PM2.5	2.0	25	0.180	0.018	40	1
WS	2.0	5	0.130	0.800		
TEMP	2.0	25	0.025	1.000		
SO4	2.0	7	0.150	0.018	40	1
NO3	2.0	8	0.150	0.018	40	1
NH4	2.0	4	0.225	0.018	40	1
EC	2.0	5	0.375	0.018	40	1
TOM	2.0	10	0.375	0.018	40	1

Performance summary report



European
Commission

Mod. Perf. Rep. URBAN PM10 OU





DELTA V3.5 & 3.6

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Towards V4.0

- **Licensing**
- **Helge's suggestions**



AOB

- *DELTA support (expert vs. standard versions)*