

CT4 visualization Tool

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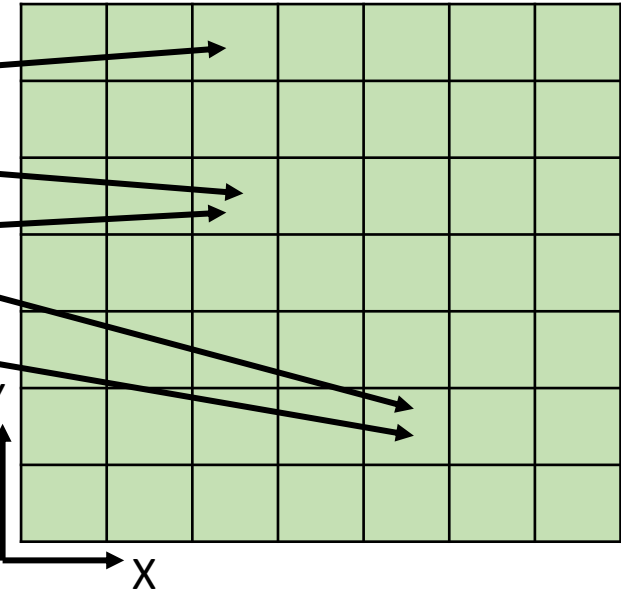
- Request from Fernando/Stijn to adapt the CT9 Tool (AQ projections)
- Results for all models:
 - Step 1: Time Series on Day 6th May
 - Step 2.1: Comparison of episodic Sampler observations and Models
 - Step 2.2: 2D maps / Scatter plots – Monthly/Episode (ML)
 - Step 3: 2D maps / Scatter plots – Annual (YL)

Gridding procedure

Model output of type 'X Y NO2'

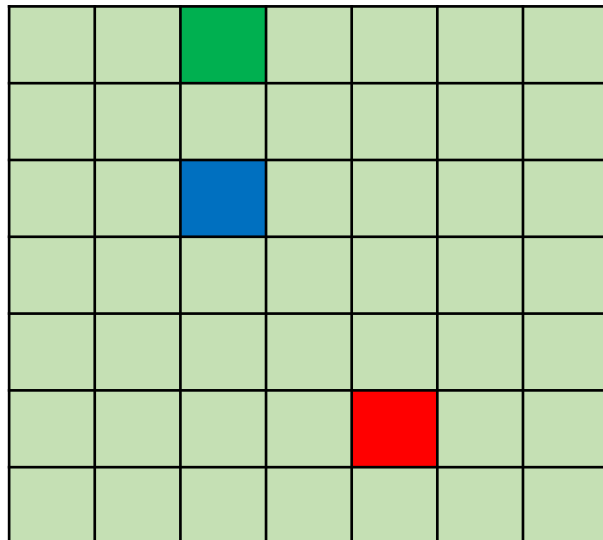
<u>X (m UTM)</u>	<u>Y (m UTM)</u>	<u>NO2 (ug/m3)</u>
153996.0025	10748.8593	34.32480647
153996.0029	211332.646	46.25557759
153996.0125	210900.3703	34.71578879
153996.0167	210763.5335	34.60795439
153996.022	211181.1189	70.45629777
...		
Up to 10 ⁶ lines		

Grid over ANTW domain, 800m x 800m



Resolution [m]

Mean value per cell
or NaN



NetCDF file: FCT4_VITO_2.5m_ANTW_NO2_BC_ML

List of models: ShortName Resolution LongName Steps

ShortName	Resolution	LongName	Steps
CERCA	2	CERC_ADAMS	ML YL DL SA
CERCC	1	CERC_CIAMAT	ML YL DL SA
ENEA	3	ENEA_PMSS	ML YL DL SA
NILU	20	NILU_EPISODE	ML YL DL SA
RICAR	1	RICARDO_RapidAir	YL
STARd	1	CIEMAT_CFDSTARCCMdetailed	ML YL DL SA
STARf	1	CIEMAT_CFDSTARCCMfactvel	ML YL SA
STARs	1	CIEMAT_CFDSTARCCMsimple	ML YL SA
SZEO	2	SZE_OPENFOAM	ML
SZEOan	2	SZE_OPENFOAMansys	DL
SZEOcm	2	SZE_OPESZEO_Coarse	DL
SZEOfm	2	SZE_OPESZEO_Fine	DL SA
UOWM	5	UOWM_CFDADREAHF	ML YL DL SA
UPM4U	5	UPM_PALM4U	ML YL DL SA
VITA	10	VITO_ATMOSTREET	ML YL DL SA
VITO	2.5	VITO_OPENFOAM	ML DL SA

CT4 DataBase

FCT4_CERCA_2m_ANTW_NO2_BC_ML.nc
 FCT4_CERCA_2m_ANTW_NO2_BC_YL.nc
 FCT4_CERCC_1m_ANTW_NO2_BC_ML.nc
 FCT4_CERCC_1m_ANTW_NO2_BC_YL.nc
 ...
 ...

.nc
 Netcdf
 STEP 2.2, 3

FCT4_CERCA_ANTW_BG801_NO2_DL.dat
 FCT4_CERCA_ANTW_TR802_NO2_DL.dat
 FCT4_CERCC_ANTW_BG801_NO2_DL.dat
 FCT4_CERCC_ANTW_TR802_NO2_DL.dat
 ...
 ...

.dat
 Time Series
 2 stations
 STEP 1

FCT4_CERCA_ANTW_NO2_SA.dat
 FCT4_CERCC_ANTW_NO2_SA.dat
 ...
 ...

.dat
 Samplers
 STEP 2.1

Openings Window

EUROPEAN COMMISSION JRC - FAIRMODE CT4 MICROSCALE TOOL

WHAT.TO.DO CITIES MODELS MODEL2 SPECIES PREFS MapWINnr INFO EXPORT

TASK= 2D Maps
MODELS= CERCA_2m_1
MODEL2= -
DOMAIN= ANTW
SPECIES= NO2 [ug/m3]
COMMENT: Tool Home Dir =
C:\Users\Public\Documents\JRC_DELTA\CT4Tool

PLUGIN DOMAIN CROP: No Yes

ADD OBSERVATIONS (ML) No Yes

MOVING POINTER OVER MAP:
[X,Y]= - Cell= -
Model: Min: Max: Value: Obs (ML):
- - - - -
- - - - -
- - - - -
- - - - -
- - - - -

SET POINTER ON MAP:
ORIGIN [153994,210653] +
[X,Y]= [] [X#Y; ENTER]

COLOURSCALE: Model AllModels User
Val0 # DVal # Ticks [ENTER] []
 Invert Colours

ScatterBounds: V0 # V1 [ENTER] []

GO EXIT

STEP_1: Time Series 6-May-2016; Mods vs Obs
STEP_2.1: Samplers Series Mods vs Obs
 STEP_2.2/3: 2D Maps
STEP_2.2/3: Scatter Mod1 vs Mod2
Conversion to Netcdf

VITO_2.5m_ML 2D map

WHAT.TO.DO CITIES MODELS MODEL2 SPECIES PREFS MapWINnr INFO EXPORT

TASK= 2D Maps
MODELS= VITO_2.5m_ML
MODEL2= -
DOMAIN= ANTW
SPECIES= NO2 [ug/m3]
COMMENT:

PLUGIN DOMAIN CROP: No Yes

ADD OBSERVATIONS (ML) No Yes

MOVING POINTER OVER MAP:

[X,Y]= [399.70,548.70] Cell= (grid_VITO_2.5m_ML) = [160,220]
Model: Min: Max: Value: Obs (ML):
VITO_2.5m_ML: 28.770 113.50 NaN -
- - - - -
- - - - -
- - - - -
- - - - -

SET POINTER ON MAP:

ORIGIN [153994,210653] +
[X,Y]= [] [X#Y; ENTER]

COLOURSCALE: Model AllModels User

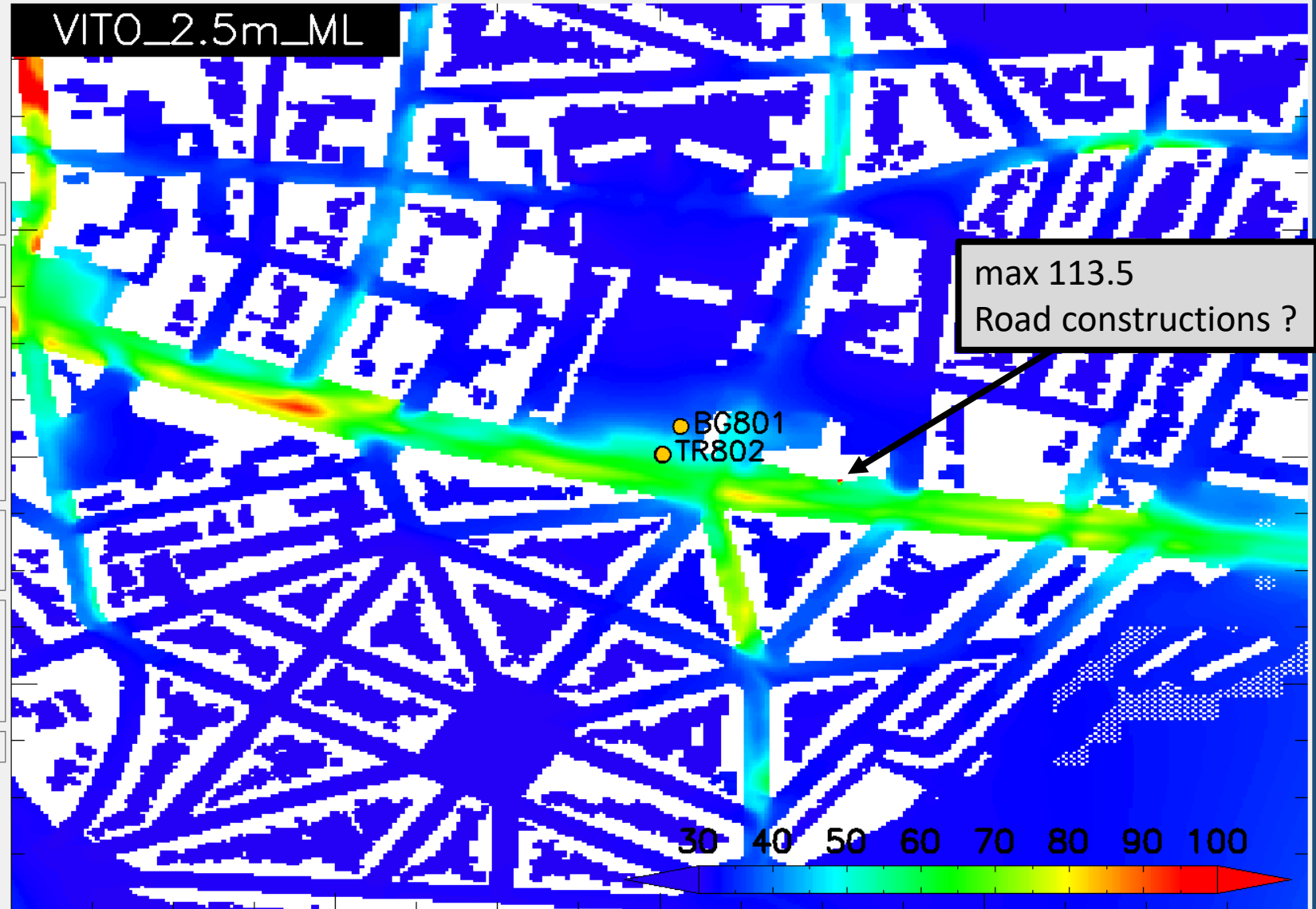
Val0 # DVal # Ticks [ENTER] 30#10#7

Invert Colours

ScatterBounds: V0 # V1 [ENTER] []

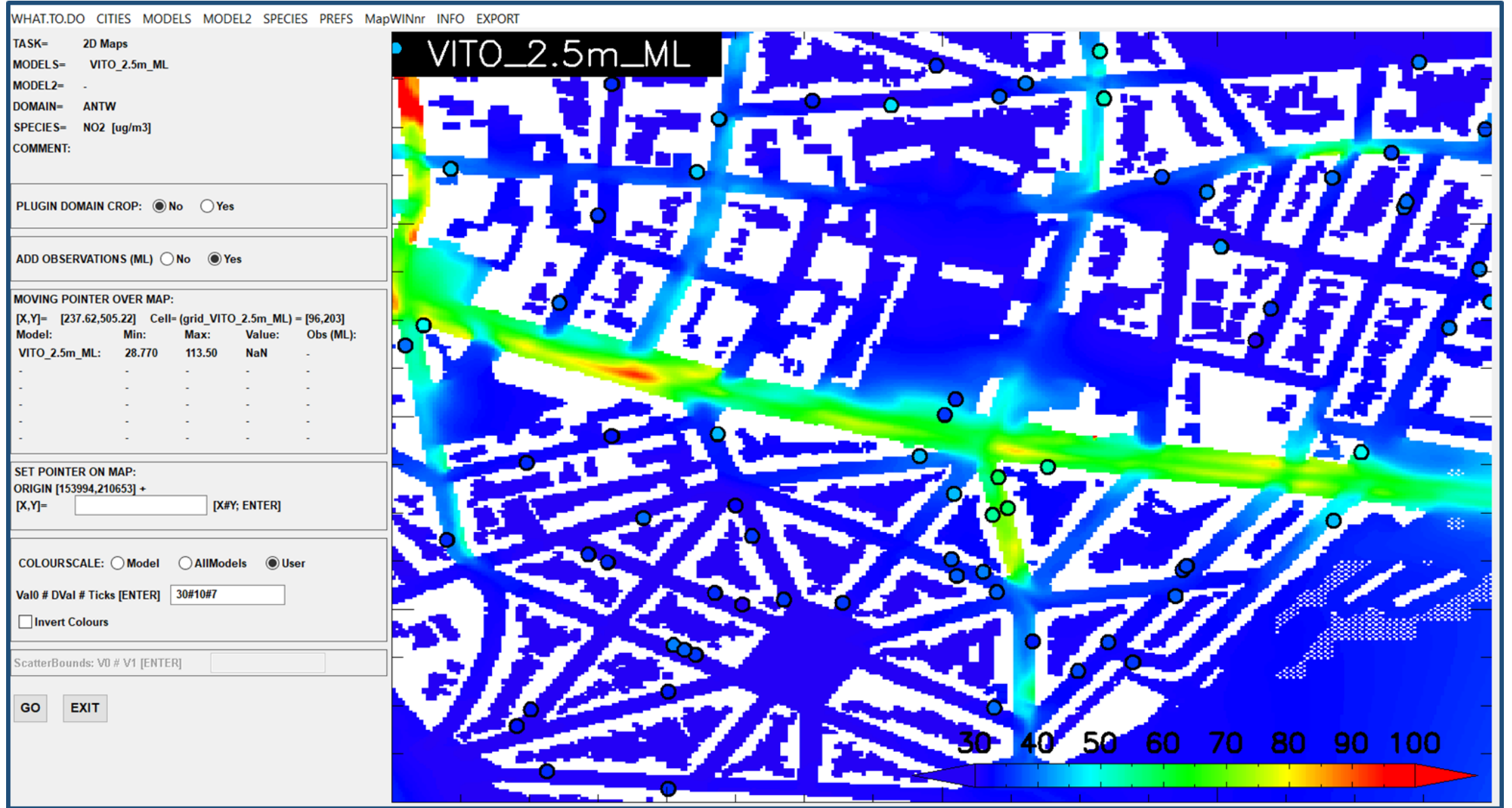
GO

EXIT

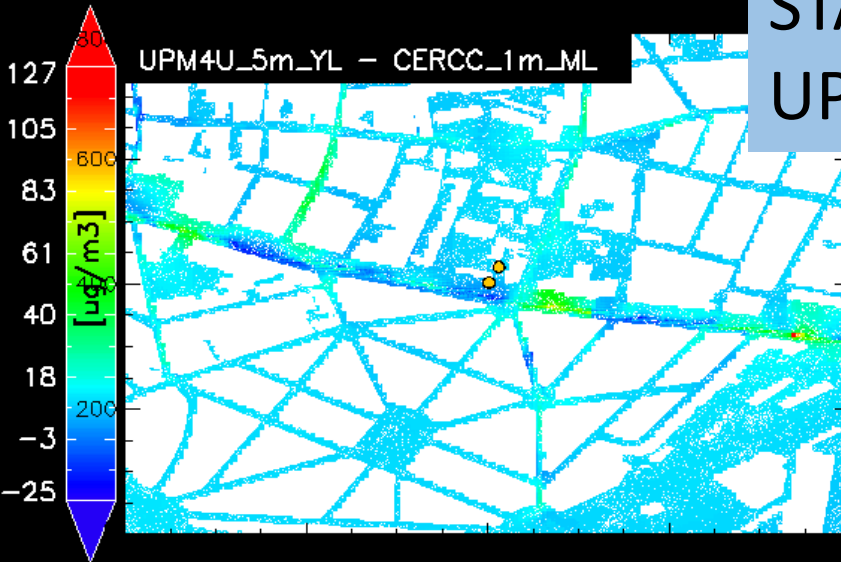
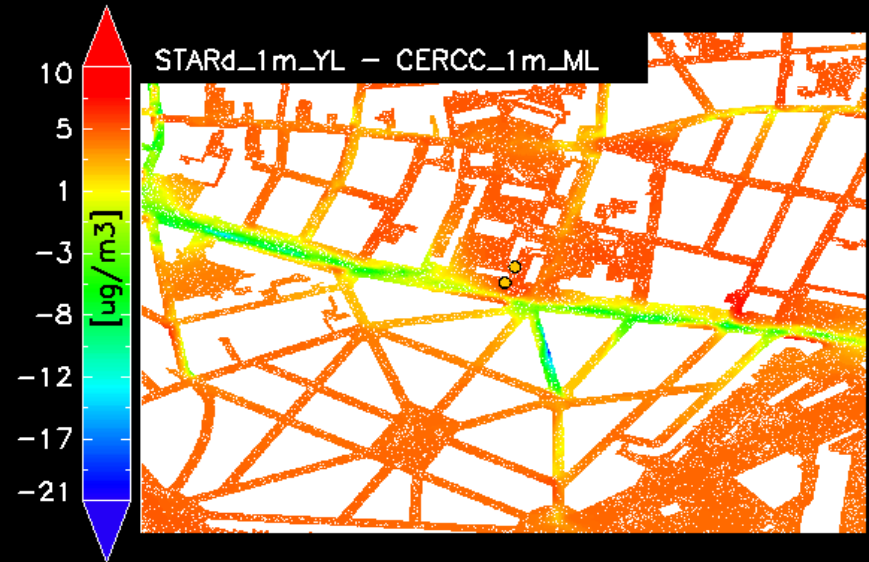
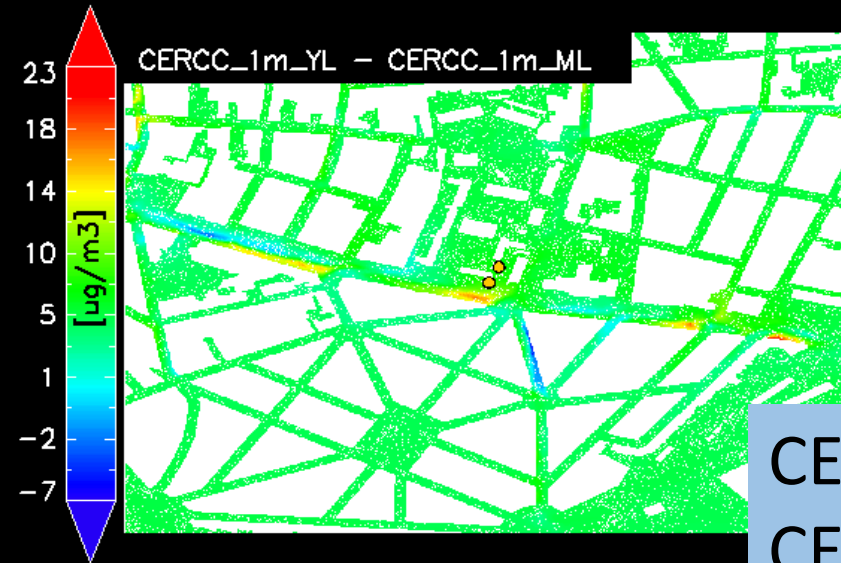
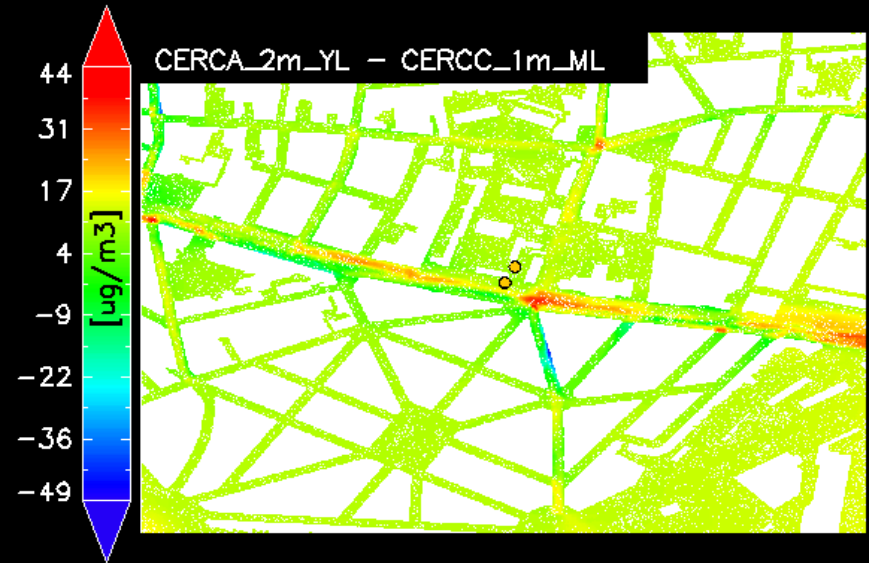


VITO_2.5m_ML

2D map + Sampler observations

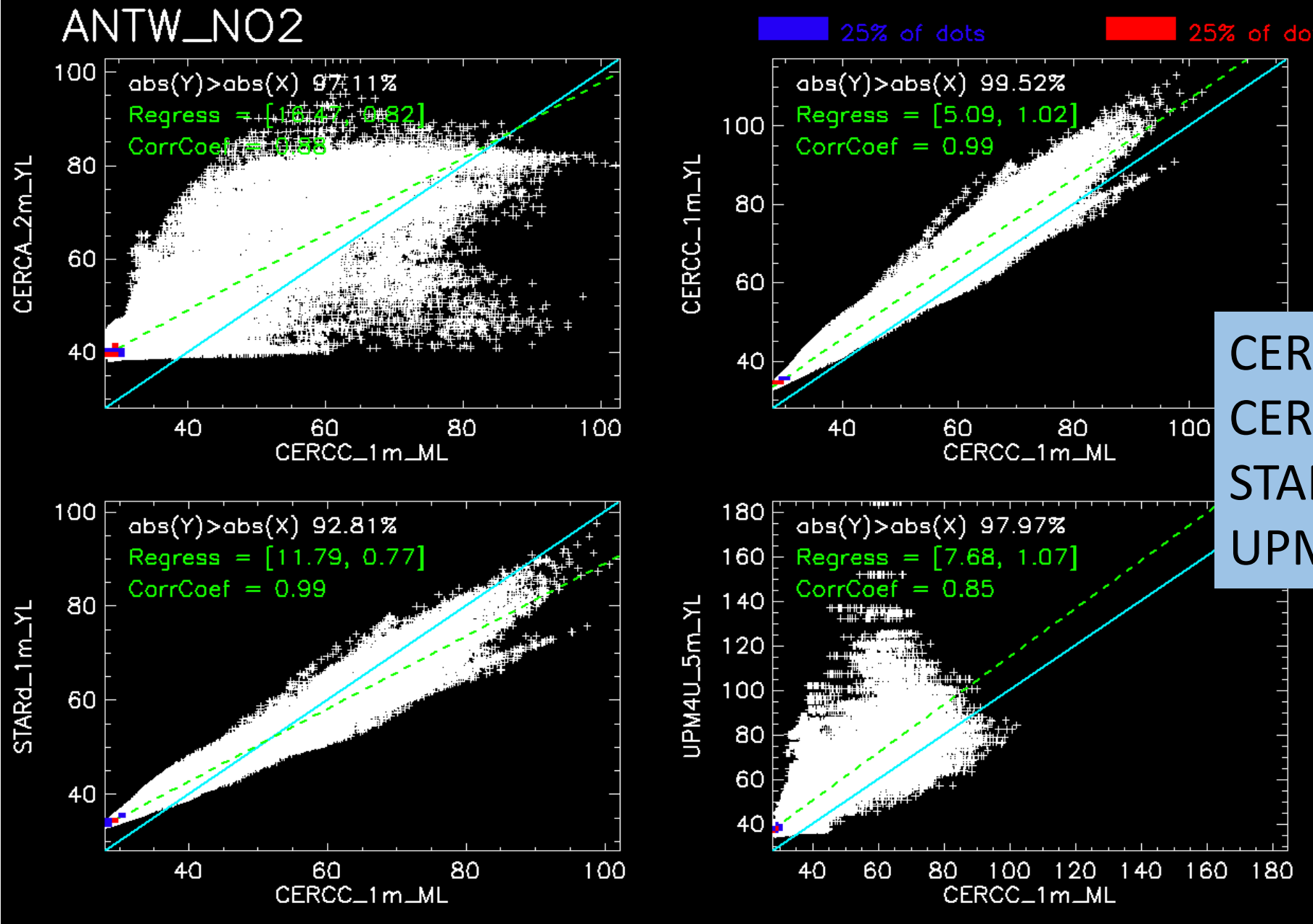


Difference between models: 4 Models – CERCC_ML



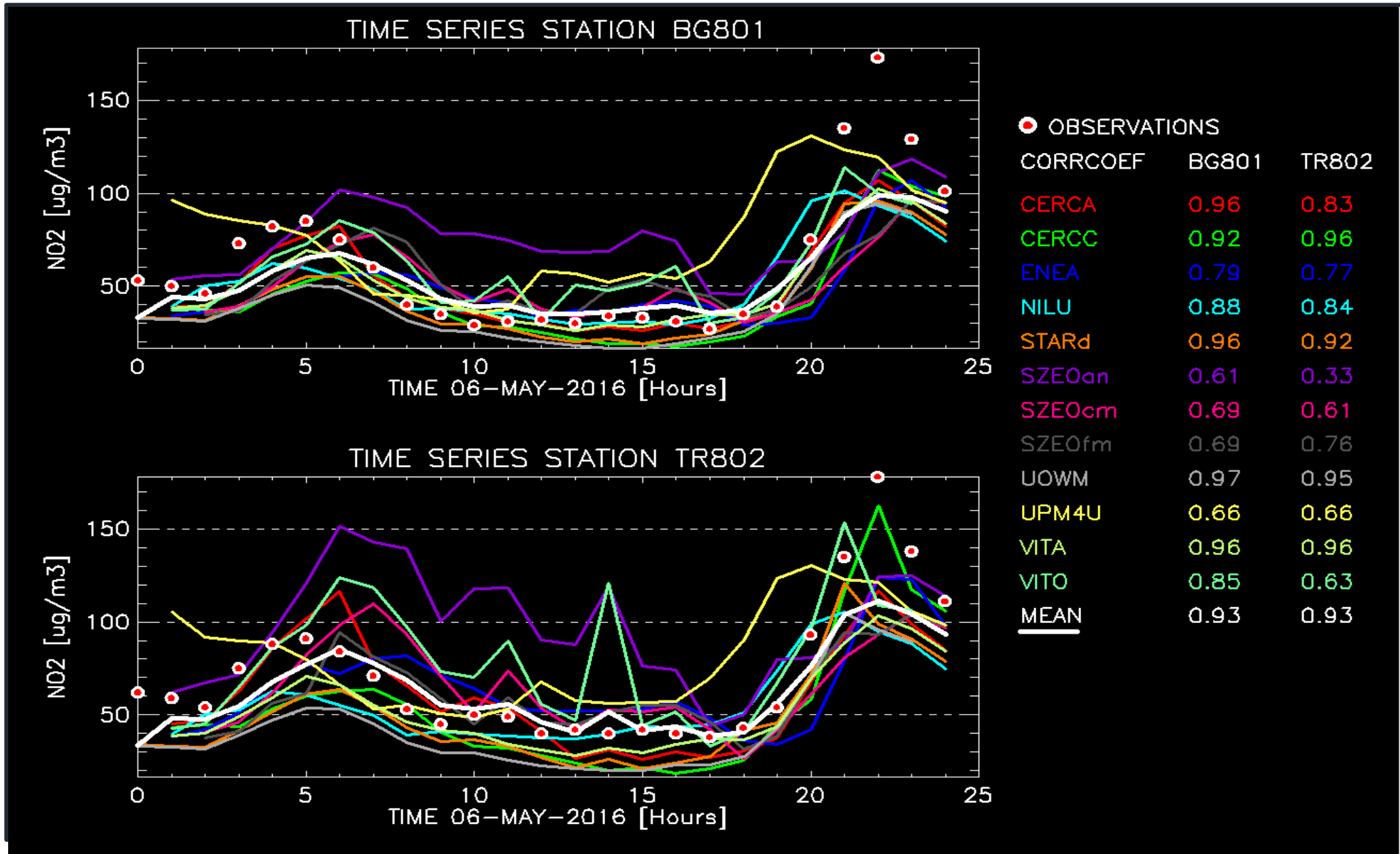
CERCA_YL
CERCC_YL
STARd_YL
UPM4U_YL
--- CERCC_ML

Scatter Plots: 4 Models vs CERCC_ML

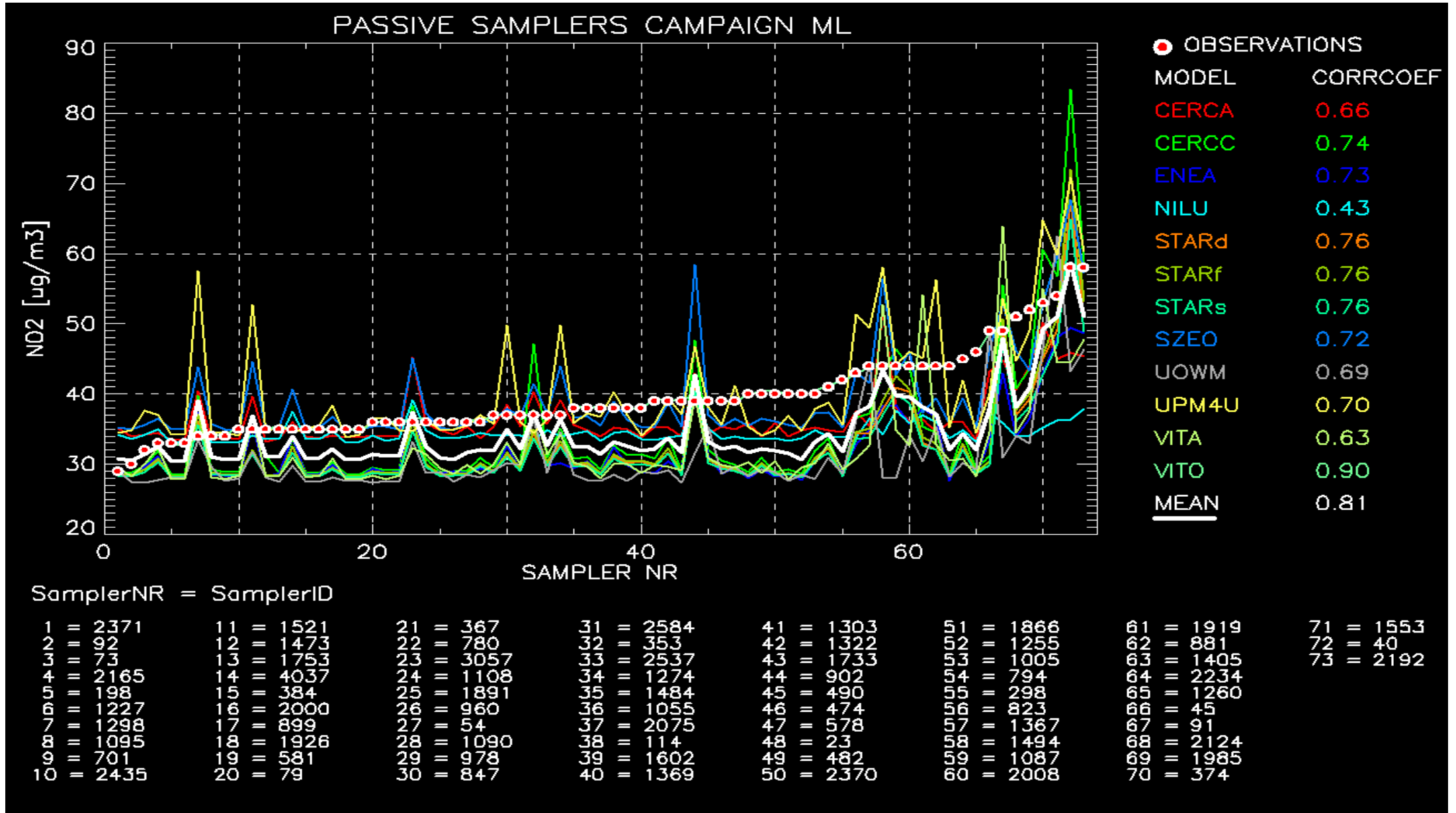


CERCA_YL
CERCC_YL
STARd_YL
UPM4U_YL
vs CERCC_ML

STEP 1 (6 May): All Models + Mean Model + Observations



STEP 2.1 (ML): All Models + Mean Model + Observations + CC



Remarks

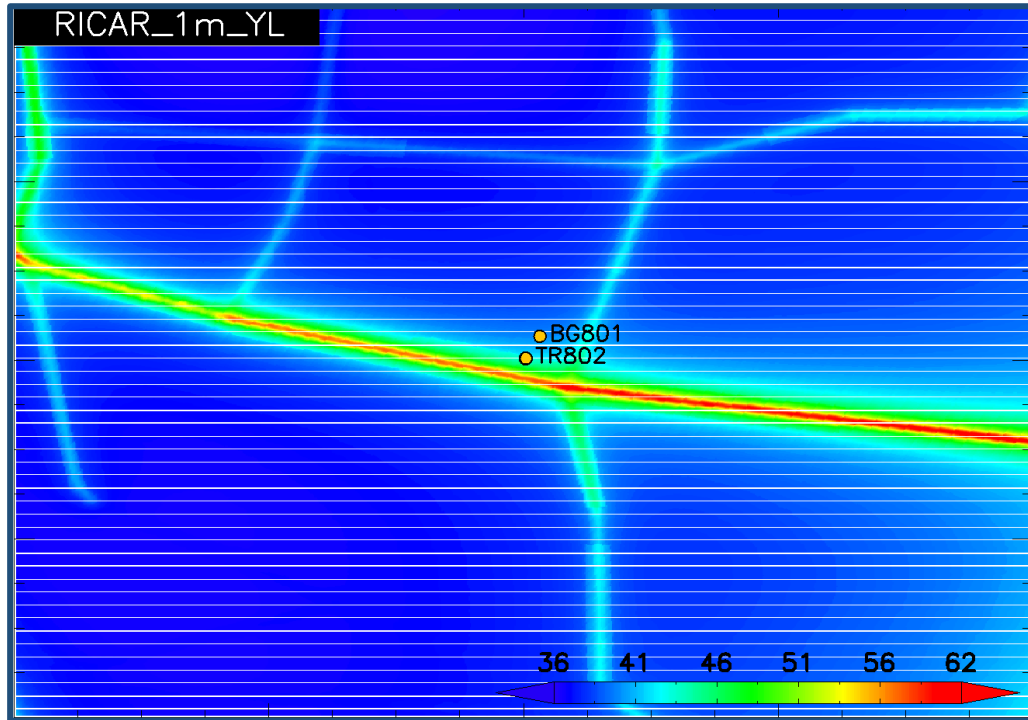
- This CT4 Application can be downloaded from the web site (?)
(36 Mb: Tool + CT4 database containing all results as of 22/2/'22)
- Windows version, no license, easy to install, easy to use, user manual
- Other cities (Győr), other pollutants (PM10, ...), other models, more stations, more samplers, other indicators, ..., are already foreseen in the setup of the Tool

The End

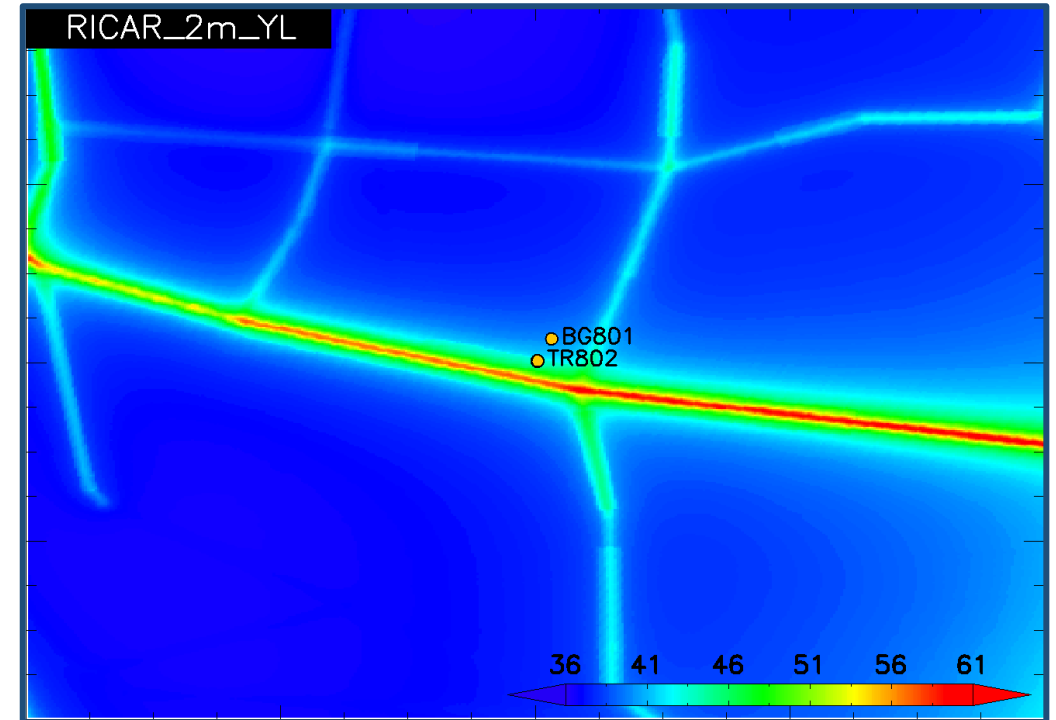
To reconsider : Resolution

Example: RICARDO_RapidAir

Resol = 1m



Resol = 2m



$|\text{Difference}| < 1 \mu\text{g}/\text{m}^3$