

For our Environment

Umwelt 
Bundesamt

FAIRMODE Plenary Meeting 2016 - Baveno

FAIRMODE – Activities in Germany

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1.Introduction

What are the relevant applications for models?

Directive 2008/50/EC – model simulations not mandatory

Models as a tool for:

- Representativeness of observation sites - e.g. traffic stations 100m, industry for 250x250m²
- Close data gaps
- Reduction of observation sites
- Source identification
- Air quality plans**
- Reporting: (a) concentration level below the lower assessment threshold
(b) together with observations if concentration level below upper assessment threshold

2.FAIRMODE MEETING IN GERMANY

- 02.07-03.07.2015 in Berlin
- 26 Participants (institutes, engineering offices and representatives of German states)
- Focus on CTM, emissions and source apportionment

Questionnaire: 13 answers (8 German states and 5 institutes and engineering offices)

1. Applied models for determination of concentration fields (WG1)

- **Background concentration** -> CTM - application in 6 states

Models: RCG (REM-Calgrid, Eurad, Chimere)

- **Street scale concentration** -> Microscale - applications 11

Models: Screening (e.g. Immis-Luft), Miskam, Lasat, ADMS-urban

- **Evaluation methods:** Bias, RMSE, cross validation (VDI 4280), time series, scatter, taylor, regression, **1xRDE, 1xDelta-Tool**

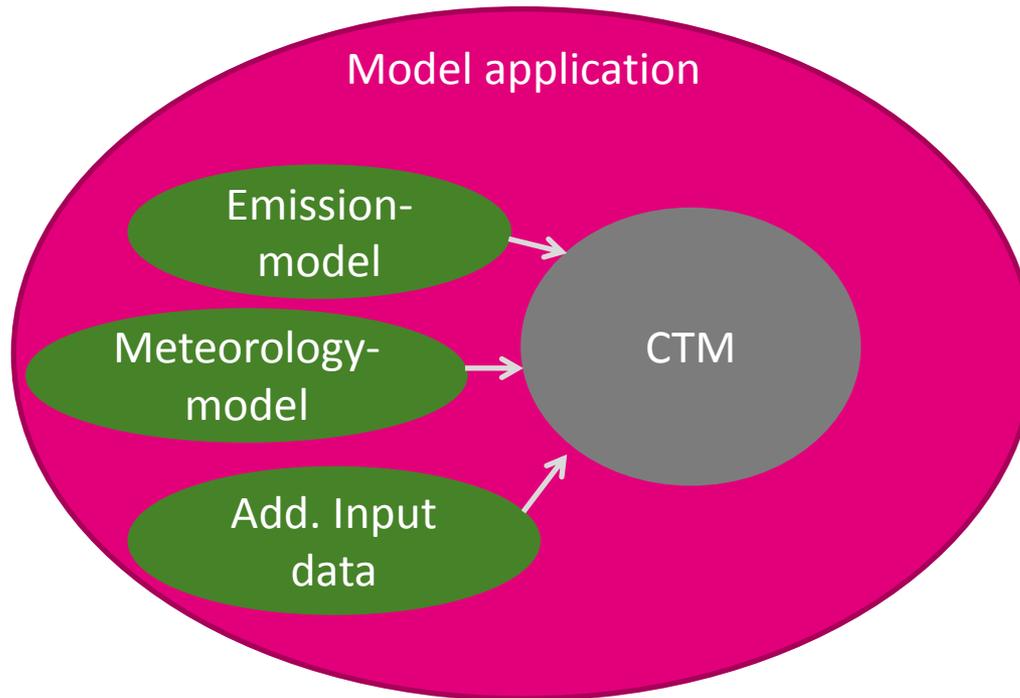
2.FAIRMODE MEETING GERMANY

2. Methods Source Apportionment (WG3)

- **Receptor oriented:** 5 states
- **Lenschow:** 2 states
- **Source oriented:** 4 states
- **Trajectories:** 5 states

2.FAIRMODE MEETING GERMANY

Results



- Delta-Tool-> evaluation of a model application and not only for the CTM itself
- „Right for the wrong reason?“

2.FAIRMODE MEETING GERMANY

Results

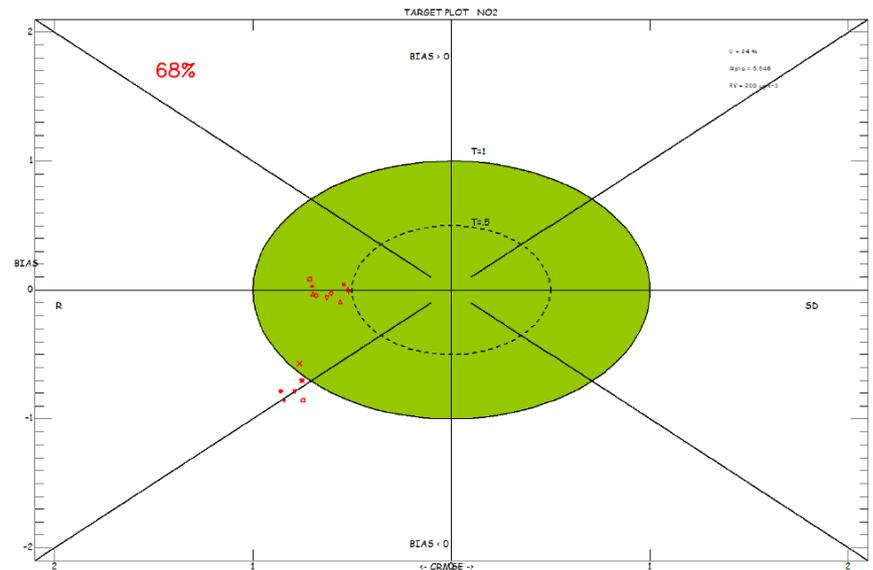
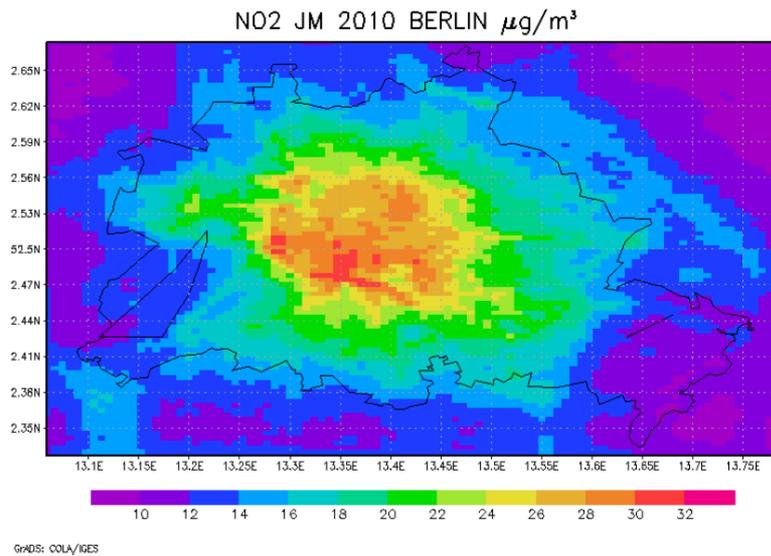
- No method for the validation of complex assimilation analysis (e.g. 4D var)
- Validation also for meteorological data
- Validation also for street scale necessary
- German Environment Agency provides an observation data set in the Delta-Tool input format for comparison with individual model application

2.FAIRMODE MEETING GERMANY

Feedback of Delta-Tool users

CTM (REM-Calgrid)

- Delta-Tool may be useful for the model evaluation up to urban background scale



2.FAIRMODE MEETING GERMANY

Feedback of Delta-Tool users

Street-scale application

- Data base is usually small for typical model applications for areas with limit value exceedances (e.g. **air quality plans**)
- Exceedance mostly for **annual** average of NO₂->Delta-Tool more for values on hourly basis

Technical feedback

- It would be good to have a flexible preprocessing tool for model data
- „Onmouseover“ information inside the Delta-tool software

2. Summary and Outlook

- Tools and knowledge developed in FAIRMODE should be distributed to the local authorities (responsible for assessment or planning) by the national contact points (e.g. by meetings).
- Delta-Tool should be more applicable for street scale model application with only a few observation sites for comparison.
- Getting more feedback from German states
- Next meeting will be in late summer 2016 and will focus on street level model applications
- CEN/TC 264/WG43 and WG44 mirror committee meetings

Thanks!

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1. Einleitung

1.3 Wie gut müssen Modelle sein?

- RDE – „Relative Direcrive Error“

