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Access to data from various sources A model user's perspective

Michael Schulz

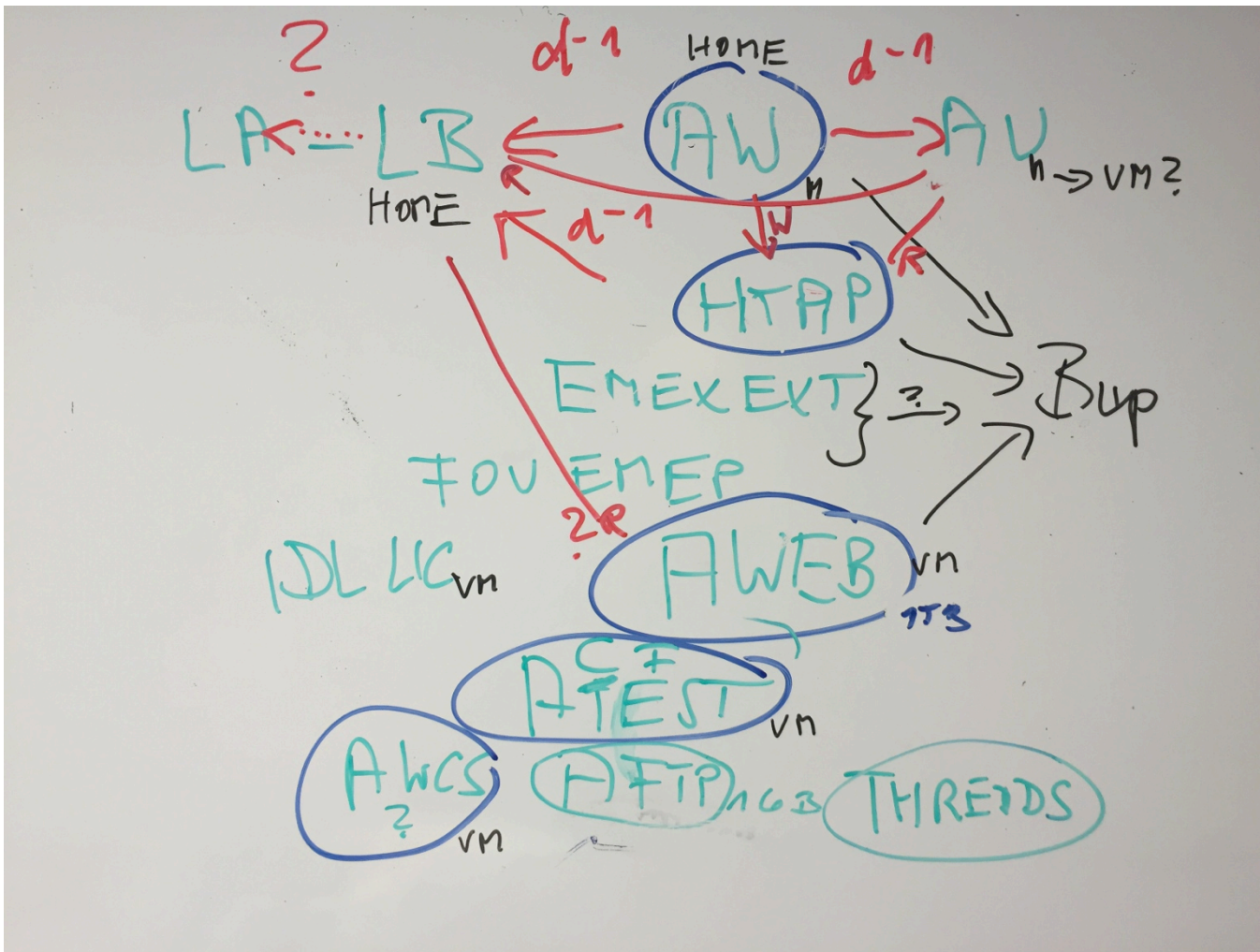
Norwegian Meteorological Institute

What kind of model user am I?

- Evaluation of climate models and atmospheric chemical transport models
- Coordination of AeroCom intercomparison and Co-chair AerChemMIP/CMIP6
(Aerosol and Reactive Gases, Short lived Climate Forcers)
- Our group at MetNo operates two models:
EMEP (“European air pollution”)
NorESM (Norwegian Earth System model)
- PI in ACTRIS-II, cci-aerosol, CAMS84



Current state of AeroCom database





What shall a modeller know about any observational data he/she wants to use?

- **Definition** – unit – meaning - aggregation
- **Context** – environment – time - place
- **Uncertainty** – error – noise - representativity
- **Origin/Source** – PI – network - database
- **Permissions** – free to use – acknowledgment
– coauthorship – feel free to look at
- **Access** – format – URL – USB-stick – database
query – naming conventions

*What are the challenges, and good things in combining
different data sets from various data sources?*



Examples for complexity of using data from different sources

- CMIP5-x ESGF, CF convention,
including non-observables
- NILU – EBAS database
- NASA - Aeronet
- Black Carbon evaluation

Atmos. Chem. Phys., 13, 8365–8379, 2013
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Atmospheric
Chemistry
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Recommendations for reporting “black carbon” measurements

A. Petzold¹, J. A. Ogren², M. Fiebig³, P. Laj⁴, S.-M. Li⁵, U. Baltensperger⁶, T. Holzer-Popp⁷, S. Kinne⁸,
G. Pappalardo⁹, N. Sugimoto¹⁰, C. Wehrli¹¹, A. Wiedensohler¹², and X.-Y. Zhang¹³



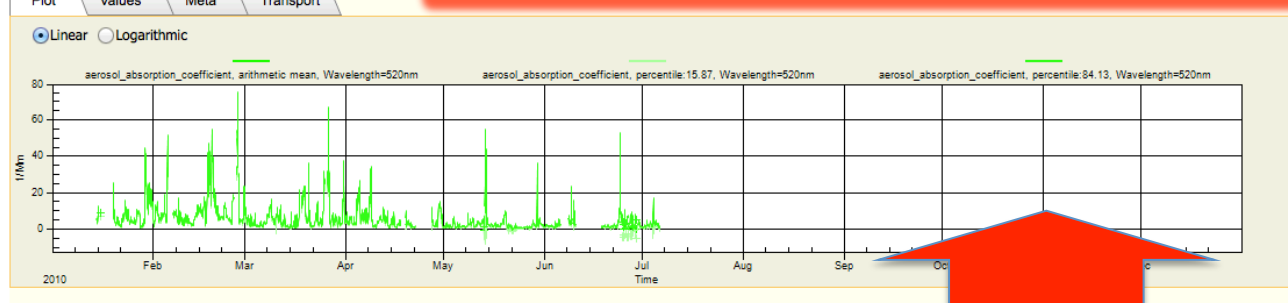
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emep Hosting the Global Atmosphere Watch World Data Centre for Aerosol **PREVIOUS PROJECTS:**
 CREATE EUSAAR EUCARII
 GEOMON - Global Earth Observation Monitoring
 MOE - Mercury Species over Europe
 IMPACTS - Integrated Monitoring Programme on Acidification of Chinese Terrestrial Systems
 SOGE - System for Observing Halogenated Greenhouse Gases in Europe

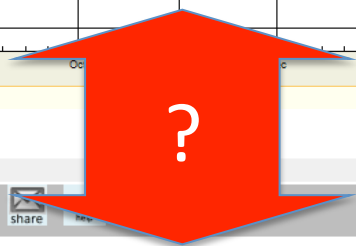
Home Dataset list Acknowledgment Data policy username Login

Month Dec 2010 Year 2010 From/To date 2010-01-01 00:00 2010-12-31 23:59 Download Plot

Sweden - Vavilhill (SE0011R) - filter_absorption_photometer - aerosol_absorption_coefficient - aerosol



EBAS
NILU
Interface



- AEROCOM phase II INTERFACE - MODEL versus DATA, Model maps & scores

Project-> AEROCOM Subset/Paper-> All-Phases-CTRL Explicit-1-panel

Graph Type: MAP of data (w area mean value)

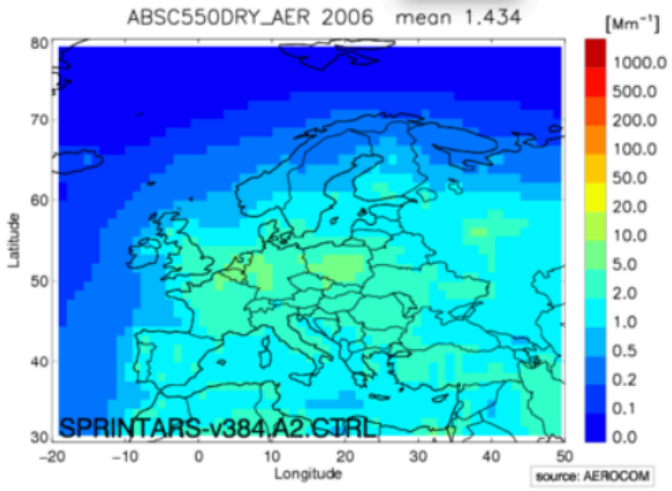
Data Set / Model: SPRINTARS-v384.A2.CTRL

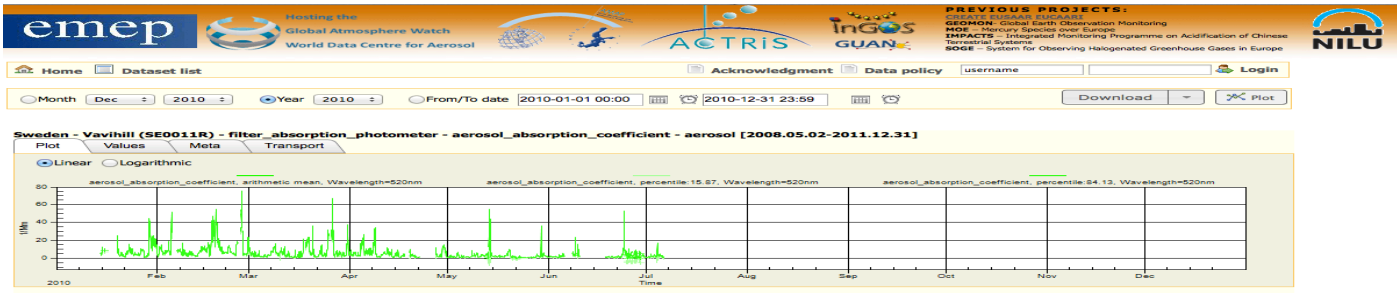
Parameter: ABSC550DRY_AER

Place-Year-Freq: EUROPE an2006 Monthly All Year

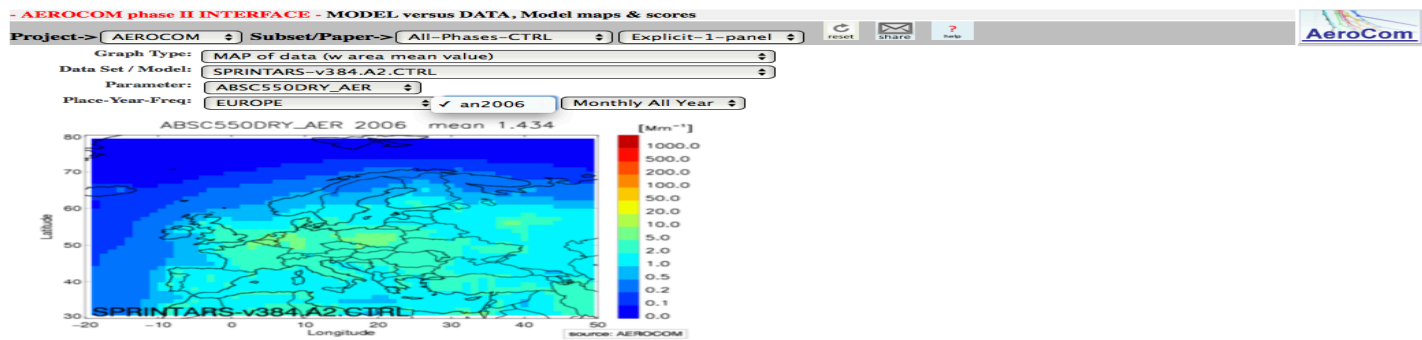
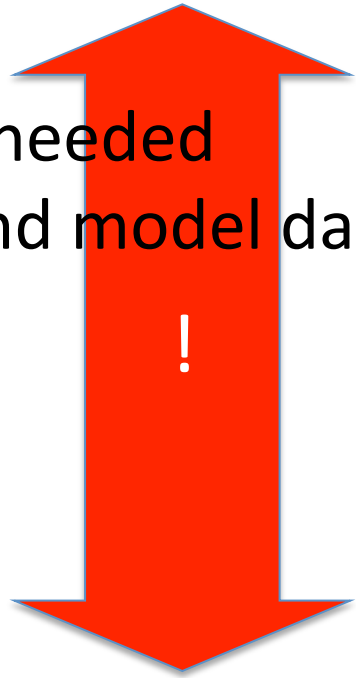
ABSC550DRY_AER

AeroCom
Web
Interface





“Secondary/Benchmark data” are needed to bridge gap between raw data and model data
Synthesized, harmonized
Evaluated, published,
prepared, Easily available



Thoughts about licensing and DOI?

- Licensing? Allow *looking at data for 3 hours?*
- DOI should be very useful for secondary data
- “Raw data” will be transformed before usage, what exactly is the DOI telling then?
- DOI-number inflation makes them less worthy
- Guiding question should be:
Which scientific progress
can we achieve by using DOIs



Reflections on third party and re-distribution of data versioning, time stamps, also related to assessment, papers, IPCC

- Commercial use should be “foreseen”
- What is bad about gentlemen agreements in form of liberal data policies?
- Versioning&TimeStamp – yes please
- Redistribution of data...sometimes needed, in particular if postprocessing transforms data



Feasible solutions on citation, acknowledgment, attribution

- Encourage fair use (prices?, news?)
- Ignore unfair use (seldom, unimportant, stupid)
- Explain and Provide choices (co-authorship, acknowledgment, citation, method section mentioning), trust users



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Takk for oppmerksomhet