Pyaerocom workshop at METNO on 15.3.19

Location: Bjørnoya møterom (Norwegian Meteorological Institute)
Date: 15/3/2019
Start: 09:00
End: 16:00

Workshop Github (notebooks and slides):

https://github.com/jgliss/pyaerocom-meetings/tree/master/20190315_workshop_metno

More information about pyaerocom:

GitHub: https://github.com/metno/pyaerocom/tree/v080DEV
Website and documentation: https://pyaerocom.met.no/
Tutorials: https://pyaerocom.met.no/tutorials.html

Pre-remarks:

A basic knowledge of the Python programming language and git is desirable. It is not required but will be very beneficial to be familiar with common Python libraries such as numpy, pandas and scipy as well as libraries for reading of and working with model data (e.g. NetCDF4, iris, xarray). Further, it will be helpful to be familiar with jupyter notebooks.

It will also be very beneficial to be familiar with the conda python packaging manager (comes with installation of *Anaconda or miniconda* Python distributions).

1 . Agenda

- **9:00 - ~10:00: Introduction into pyaerocom (Jonas Gliss)**
    - Basic introduction into API and features.
    - "Find your way": where to find help and information, how to get started.
    - Small 'online' example (Jupyter notebook).
- **~10:00 - 10:15: Question round**
- **10:15 - 10:30: Coffee break**
- **10:30 - 10:45: Setup computers for interactive session**
    - Work on lustre module: aerocom-pyaerocom-master
- **10:45 - 12:00: Interactive session**
    - Reading of ungridded data (observation databases, e.g. Aeronet, EBAS)
    - Working with *UngriddedData* object
    - Reading of gridded data (models and satellite data)
    - Working with *GriddedData* object.

- **12:00 - 12:45: Lunch break**
- **12:45 - 13:30: Wrap up / feedback round**
- **13:30 - 13:50: Hanna S.: presentation on 'ungridded reading'**
    - Example: Implementation of ungridded reading routine based on CSV data files from paper [Aas et al. 2018](#)

- **13:50 - 14:30: Interactive session:**
    - Continue work from morning interactive session
    - Colocation exercise
    - **Optional alternative:** 2. group working on ungridded reading:
        - *Writing your own reading routine for observation data*
        - Look into source code of existing reading routines
        - Implement a reading routine based on a simple example dataset
- **14:30 - 14:45: Coffee break**
- **14:45 - 15:30: Continue interactive work**
- **15:30 - 16:00: Wrap up / feedback round / summary.**

2. PLEASE INSERT BELOW YOUR WISHES AND SUGGESTIONS FOR THE WORKSHOP

- *Michael Gauss: Read Sentinel-5p columns of NO2, SO2, CO and ozone into pyaerocom and compare to other satellites and model data. Note that the files from Sentinel-5P are point clouds but can be converted into gridded data (by a script developed by Arjo Segers) before being put into pyaerocom.*
- *Eivind G. Wærsted: Read uEMEP results as gridded data (I wish to use pyaerocom classes for working with these data). These data are given in UTM33 coordinates rather than longitude and latitude, and Norway is separated into a large number of separate grids with different spatial resolutions.*
- *Svetlana Tsyro: Make mapping between EMEP parameter names and Aerocom's CF convention (e.g. as in Jan's /lustre/storeA/project/aerocom/bin/EMEPLatLon2AerocomLatLon.sh)*
- *Dave Simpson - use pyAerocom to explore and export Ebas data (since Ebas is so user-unfriendly ;-)*