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HTAP2 Data Analysis Logistics

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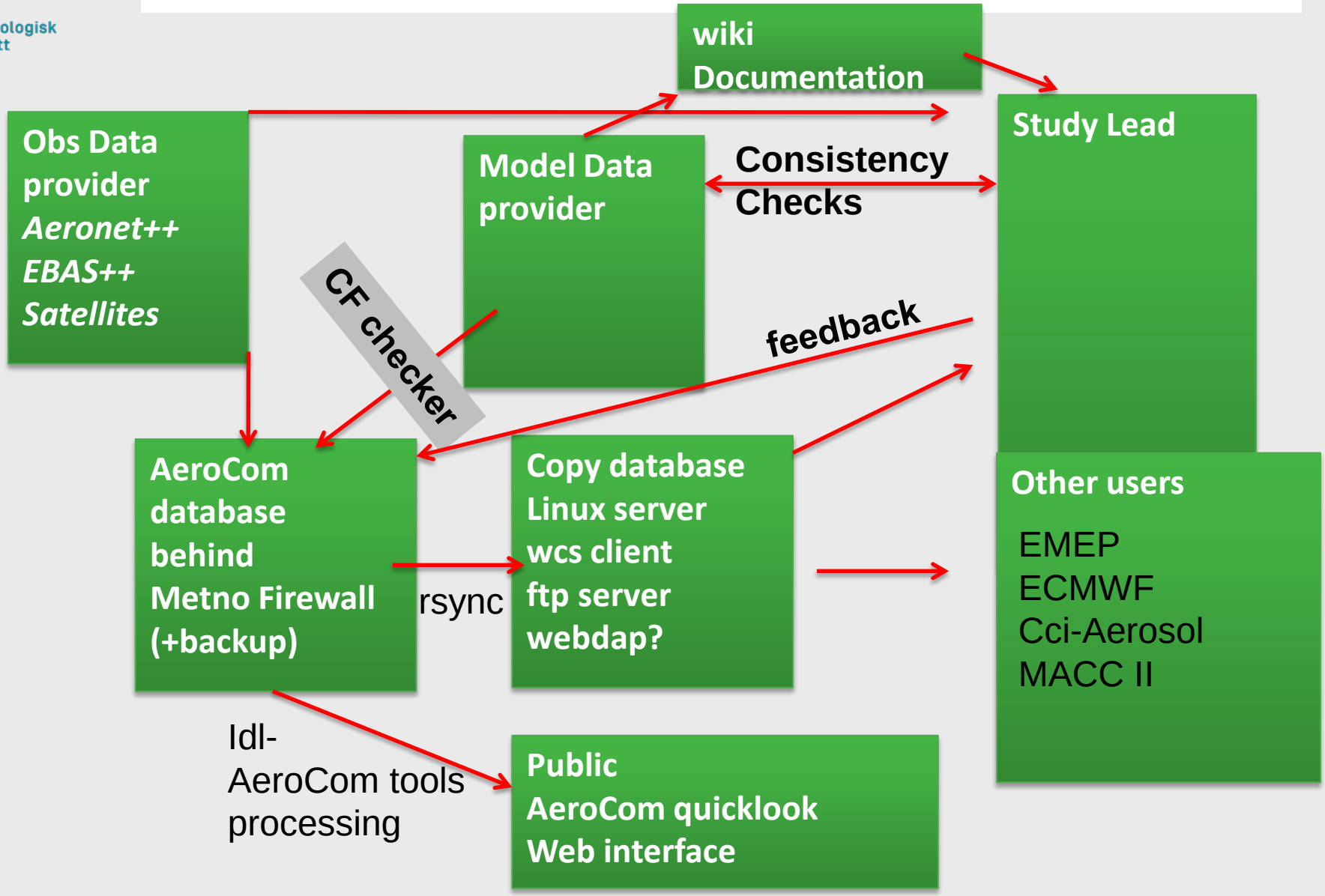
FZ Julich

Why should model authors put effort into harmonized model outputs?

- Data originator knows model data best
- Better communication of results
- Facilitating cross-model cross-data analysis
- Documentation & science traceability

Data flow AeroCom/HTAP



Overview

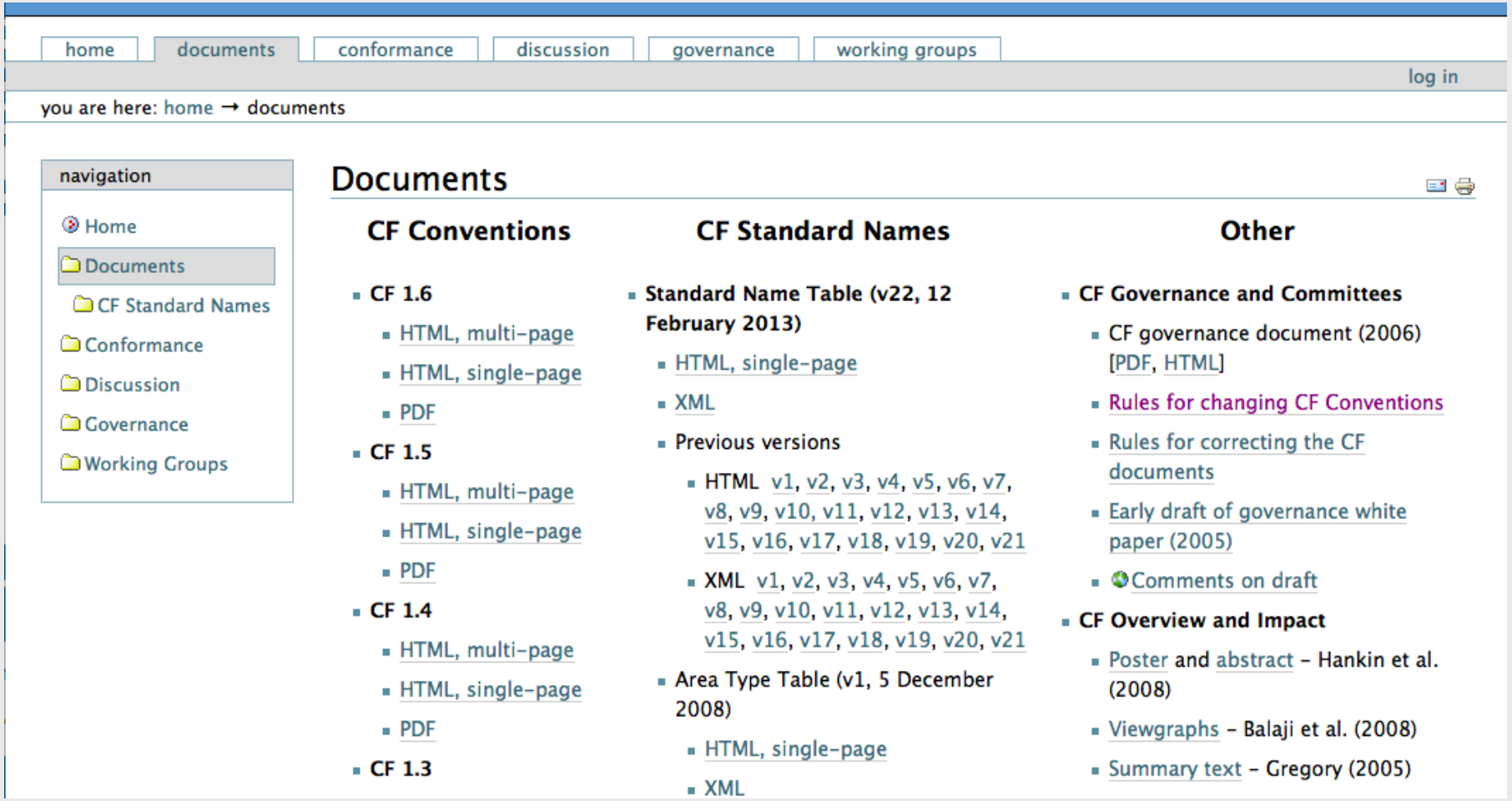
- How shall I format model data and check format?
- How can I upload model data?
- How can I check uploaded data?
- How to access the data for analysis?
- How to correct uploaded data?
- Am I allowed to carefully document uploaded data?

SEE summary on HTAP wiki =>
http://iek8wikis.iek.fz-juelich.de/HTAPWiki/HTAP-2-data-submission

How shall I format model data and check format?

- Understand basics of netCDF and CF convention
  - http://www.unidata.ucar.edu/software/netcdf/
  - http://cf-pcmdi.llnl.gov
- Check output requirements (see B.Koffi talk)
- Use either
  - CMOR fortran routines & library (Climate Model Output Rewriter) using CMOR HTAP tables (*ready very soon*..)
    - http://www2-pcmdi.llnl.gov/cmor/
  - nco & cdo scripting to transform model output (we will put example commands on wiki)
    - http://nco.sourceforge.net
    - https://code.zmaw.de/projects/cdo
- Rename files according to HTAP file name convention
  - ONE FILE PER VARIABLE AND YEAR

Where to find more on CF convention http://cf-pcmdi.llnl.gov



HTAP file name convention

- "**htap2_<ModelName>_<ExperimentName>_<VariableName>_<VerticalCoordinateType>_<Period>_<Frequency>**.nc"
- <**ModelName**> => can be chosen such that Model Name, Model version and possibly the institution can be identified. No underscores (_) are allowed in <ModelName>, use (-) instead. Restrict <ModelName> to max 20 characters.
- <**ExperimentName**> => see HTAP2 Experiment Specifications on wiki page
- <**VariableName**> => see htap output variable names in excel sheet on wiki page
- <**VerticalCoordinateType**> => "Surface", "Column", "ModelLevel", "SurfaceAtStations", "ModelLevelAtStations"
- <**Period**> => "2008", "2010"
- <**Frequency**> => "timeinvariant","hourly", "daily", "monthly", "sat1000", "sat1330", "sat2200", "sat0130"

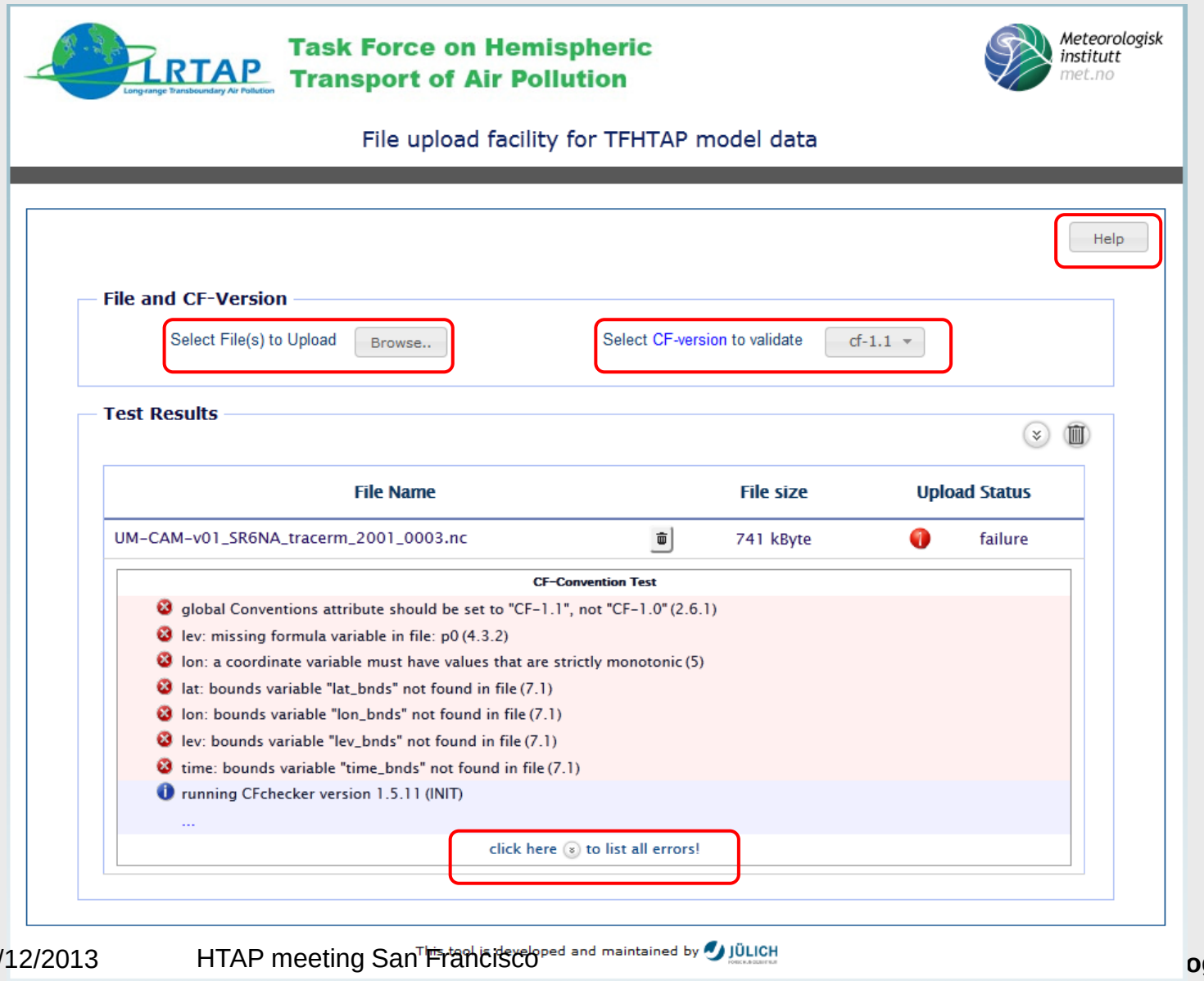
How shall I check the format?

- ***Upload (test-)file (<2GB) to CF checker***
  http://aerocom-test.met.no/upload

- ***See errors and warnings***
  If you do not know how to correct, contact "htap"
  …we will try to build up a knowledge base for corrections

- ***If the file is too big or upload too slow***
  cut out first time steps with
  ncks –d time,0,10 in.nc out.nc

CF Checker upload interface



How can I upload model data?

- Obtain account on MetNo aerocom/htap server(s) by sending email to **jan.griesfeller@met.no and michael.schulz@met.no**
- Send public ssh key by email to Jan/Michael to allow MetNo giving you access
- Upload files to

  aerocom-users.met.no:/media/scratch/incoming/<your dir>

  OR

  ftp.aerocom.met.no:/incoming/<your dir>
- When ready notify **jan.griesfeller@met.no and michael.schulz@met.no** that you have uploaded data

How can I check uploaded data?

After data are uploaded,
they are copied to the internal aerocom/htap database,
synchronised over night to the external htap database

THUS after “some days”

- Look into the database
  aerocom-users.met.no:/metno/aerocom/users/aerocom1/HTAP2/<modeldir>
- Look for the quick-looks via aerocom web interface:
  http://aerocom.met.no/cgi-bin/aerocom/surfobs_annualrs.pl?Modellist=“HTAP2”

Quick-looks via AeroCom web interface

http://aerocom.met.no/cgi-bin/aerocom/surfobs_annualrs.pl?Modellist="to be announced"

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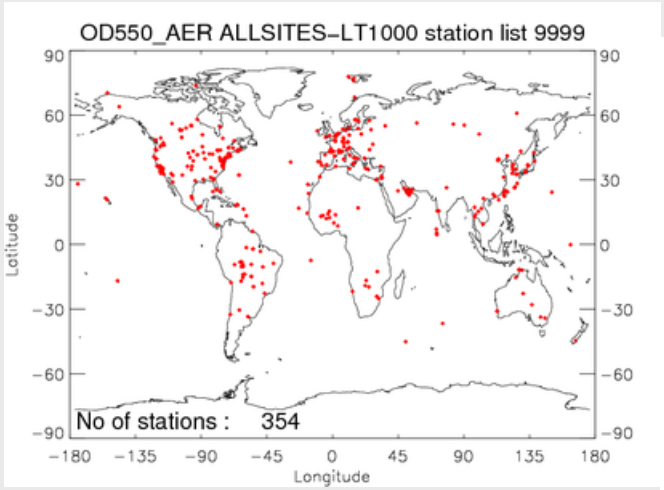
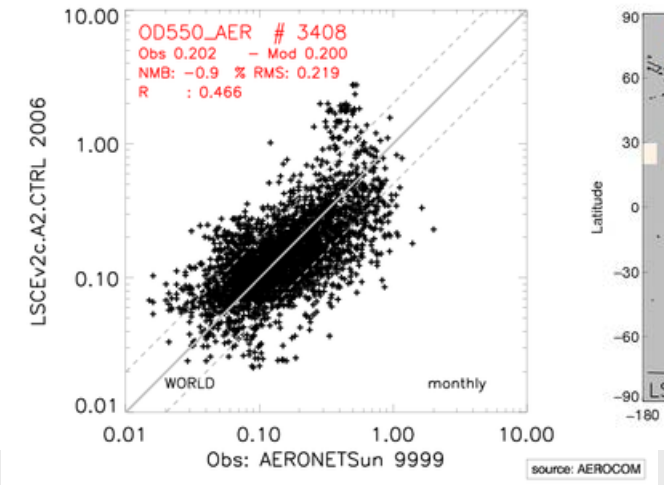
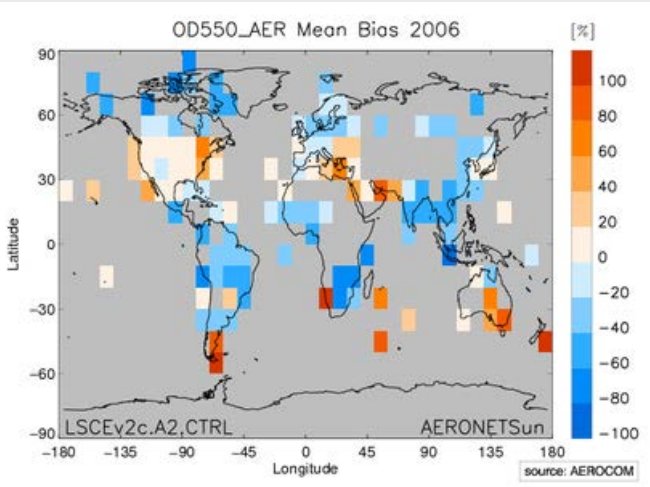
Where compared ?



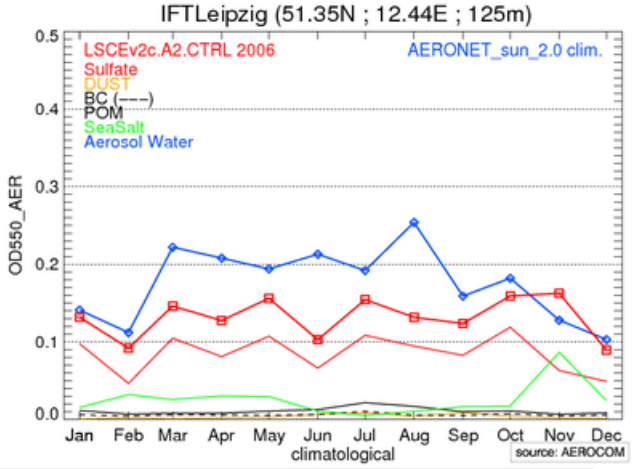
Correlated ?



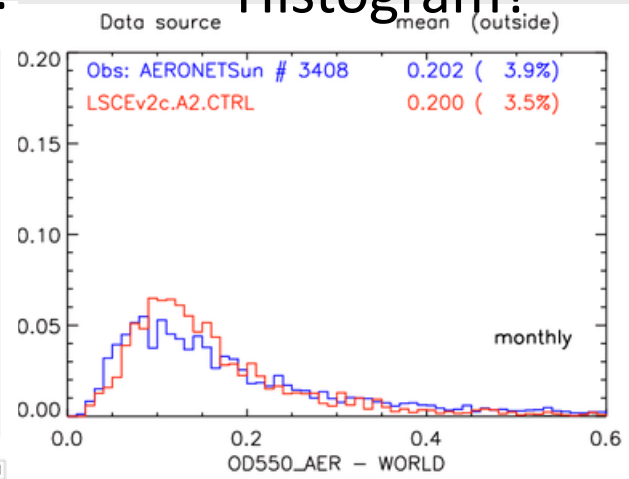
Regional Normalized Bias ?



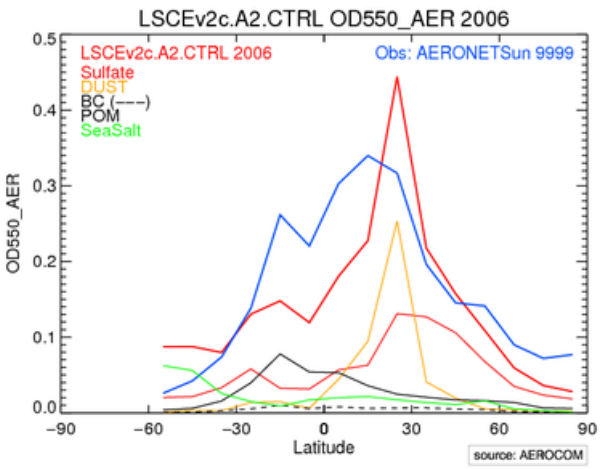
Local month to month?



Histogram?



Zonal Absolute Bias ?



How to access the data for analysis?

- Via linux aerocom-users.met.no
  - User account required (same as for upload)

    linux ubuntu precise w. emacs, scp, cdo, nco, ncview, etc

- Via wcs client **http://join.iek.fz-juelich.de/htap/home**
- Copy with ftp, scp, wget, to your own disk
- Possibly also webdab & ESGF (under investigation)

How to correct uploaded data?

Technical summary for polishing scientists

M.Schulz & F.Dententer

- In case of updates of files, the model version identifier should also contain information on the resubmission of model results. **Additional files** which do not change an earlier submission **may contain the same version number** as an older submission. Corrections and **a model rerun should be accompanied by a new model version identifier**. Old still valid files may be merged upon request with new data. Old versions of model submissions will be temporally moved to a separate directory by Met.No, and where possible, deleted after some time. An exception will be made for versions that have been used in publications. **Modellers are responsible for communication of major updates to their models (e-mail and log-files, see below)**. Model analysers are responsible for frequently verifying changes in model submissions (e.g. before submitting a paper).

- Make sure Corrections end up in the database !!

Am I allowed to carefully document uploaded data?

❑YES

- ❑ Please do on wiki yourself, “log style”:

http://iek8wikis.iek.fz-juelich.de/HTAPWiki/htap2-file-submission

- ❑ Please put:
  Model version explanation, Date of submission, Contact person, Link to more detailed documentation, comment on specific version used,
- ❑ Add in particular a remark if corrections were made
- ❑ **SUBMIT MODEL DESCRIPTION DOCUMENT to Terry**

That’s all for HTAP…thanks