

Enhancing data connectivity of modelling results obtained in the TFHTAP multi-model assessment study

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Background

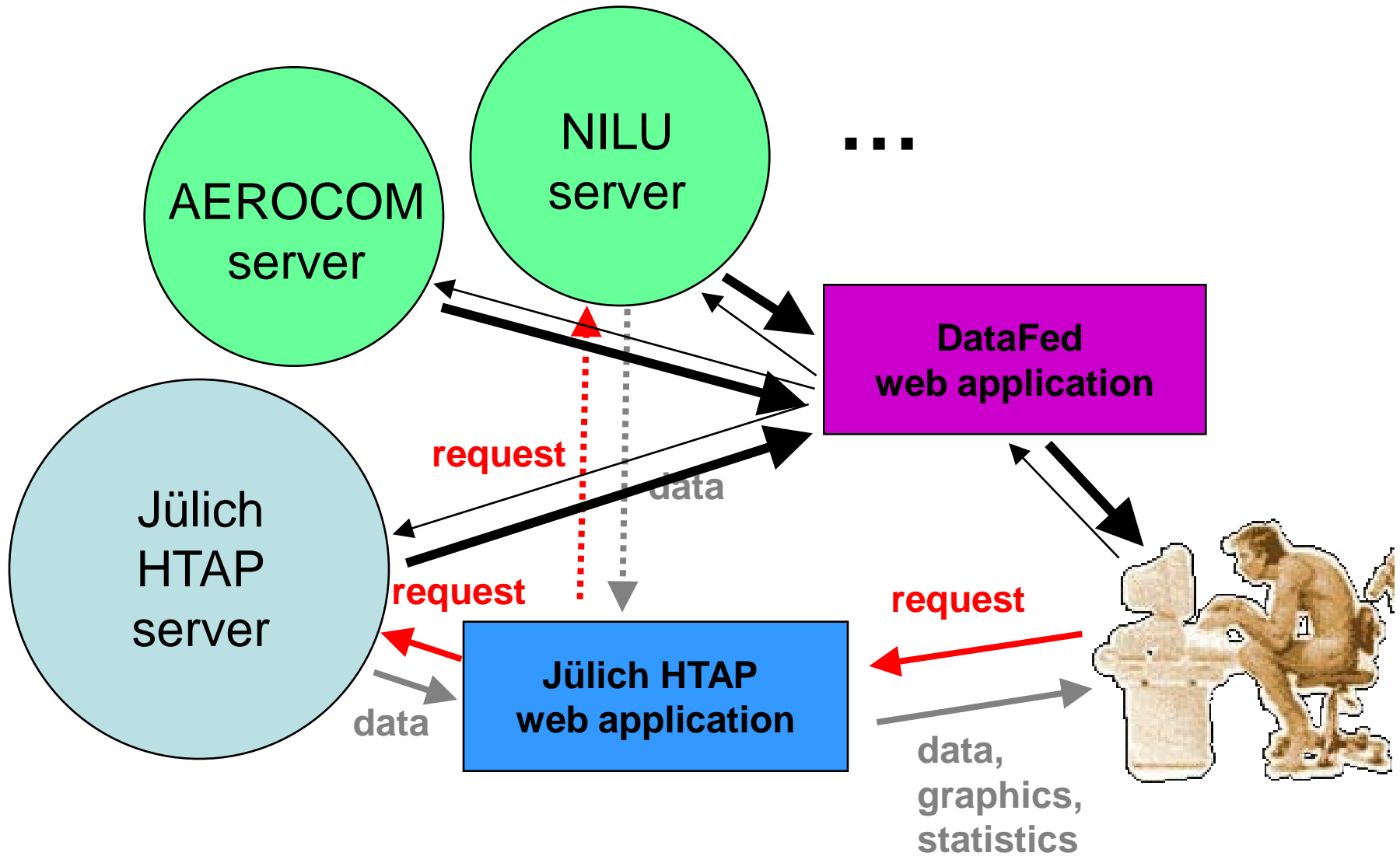
- Jülich hosts the central HTAP data server (htap.icg.kfa-juelich.de) – presently 58 user accounts
- HTAP multi-model study results are accessible only via direct login, i.e. you must have an account and know how to access netcdf files
- OGC (Open Geospatial Consortium) has defined protocols for „unattended“ data delivery via web-URLs
- WUSTL has created a software package that implements (parts of) the OGC concept
- EPA and DE-ENV have an interest to make HTAP results available in an open and unrestricted manner
- Scientific users could benefit from online model intercomparison and validation tools

Objectives of „HTAP server project“

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- Install WUSTL prototype software to establish connectivity
- Screen and reformat existing data sets so that they can be made available
- Compile data catalogues
- Develop a demonstration web application
- Analyse performance of data service with respect to hardware and software efficiency

Concept



Status

- OWS software installed and running
- Service accessible: <http://htap.icg.kfa-juelich.de:58080/>
- First basic scripts installed to generate data catalogues
- First basic web interface created
- Several problems with file formats, domain description, etc.

Example

Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://htap.icg.kfa-juelich.de:8080/

Data from: http://htap.icg.kfa-juelich.de:58080/HTAP

- [STOCHEM model output for HTAP experiments 2006 SR1](#)
- [NASA GSFC model output prepared for HTAP experiments 2006 SR1](#)
- [PSL model output prepared for HTAP experiments 2006 SR1](#)
- [FZJ model output prepared for TFHAP Base case simulation for year 2001](#)
- [YorkU model output prepared for TFHAP SR1 - Base case simulation for year 2001](#)
- [GEOSChem-v45 SR1 tracerm 2001](#)
- [TM5-JRC model output prepared for HTAP experiments 2007 SR1](#)
- [UiO model output prepared for HTAP experiments 2006 SR1](#)
- [LMCA model output prepared for TFHAP Base case simulation for year 2001](#)
- [met.no model output prepared for HTAP experiments 2006 SR1](#)

Mozilla Firefox

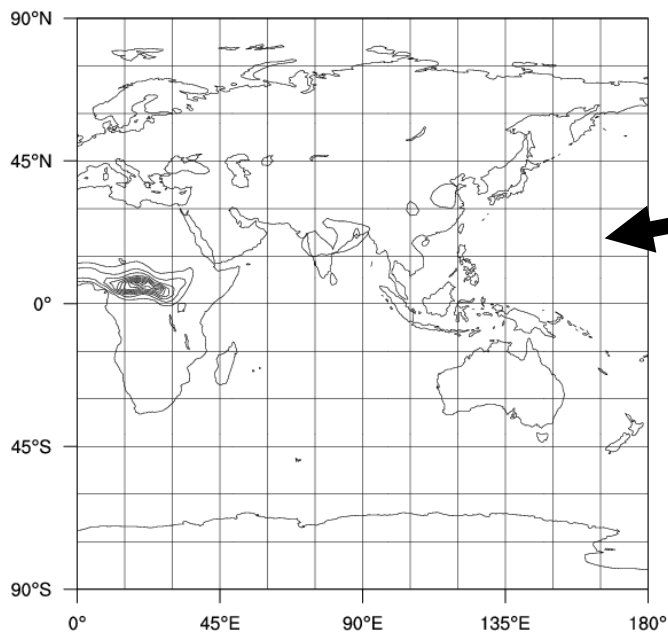
File Edit View History Bookmarks Tools Help

http://htap.icg.kfa-juelich.de:8080/?server=http://htap.i

Data from: http://htap.icg.kfa-juelich.de:58080/HTAP

- [hybrid sigma coordinate A coefficient for layer](#)
- [hybrid sigma coordinate A coefficient for layer bounds](#)
- [hybrid sigma coordinate B coefficient for layer](#)
- [hybrid sigma coordinate B coefficient for layer bounds](#)
- [lat_bnds](#)
- [lev_bnds](#)
- [lon_bnds](#)
- [reference pressure for hybrid sigma coordinate](#)
- [Surface Pressure](#)
- [time_bnds](#)
- [CO](#)
- [DMS](#)
- [HNO3](#)
- [NO2](#)
- [NO](#)
- [O3](#)
- [OH](#)
- [PAN](#)
- [SO2](#)
- [grid-cell area](#)

http://htap.icg.kfa-juelich.de:8080/?server=http://htap.icg.kfa-juelich.de:58080&folder=HTAP&request=GetCoverage&identifi...



Current issues

- data attributes not always compatible with OWS
(missing_axes, unknown_axes, ambiguous_axes, missing_time_units, invalid_time_format, invalid_chars)
→ reprocessing of netcdf files needed
- irregular time coordinate (e.g. monthly means) cannot be extracted into catalogue
- model level extraction and interpolation
- geographic domain for Europe (350 E – 60 E)
- exclude list for variables that are of no interest to user
- list of variables to be automatically included in data file

Next steps

- define web interface layout and functionality
- customize template xml files
- clarify handling of coordinate data (usage of bounds information, ...)
- map data files -> providers
- discuss cache handling for both ows server and frontend: file lifetime, hard quotas and what to do when the cache is full
- clean data files
- extend owsadmin to allow for irregular time series and level extraction
- assess efficiency and performance