HTAP Data Network
Progress Report, June 2009

Rudolf B. Husar, Washington U., USA
Martin Schultz, FZ Juelich, Germany
Greg Leptoukh, NASA GSFC, US

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HTAP Problem: Model-Observation-Emission Closure

Uniform access to ES data...

- Models
- Satellite, surface obs.
- Emissions

Challenges

- Interface to user data and apps.
- Interface to GEOSS Infrastructure
- Persistency of HTAP data network
Any dataset is applicable to multiple uses

Any applications require multiple datasets

GEOSS Information Infrastructure

- Sur. Obs.
- Satellite
- Population
- Model

Any dataset is applicable to multiple uses

Informing the Public
Enforcing Standards
Hemispheric Transport
Atmospheric Composition

Real-time Service
Regulatory Analysis
Policy Assessment
Science & Education
Standard Data Access Interface

Loosely coupled components

WCS Data Wrapper

Standard WCS

Space-Time Query Language
Enhancing data connectivity of modelling results obtained in the TFHTAP multi-model assessment study

Martin Schultz, Michael Decker, Sebastian Lührs, Sabine Schröder
Forschungszentrum Jülich, Germany
Objectives of „HTAP server project“

June – Sep 2009

- 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
Giovanni for HTAP

Gregory Leptoukh
NASA Goddard Space Flight Center

Giovanni is a Web-based application to visualize, analyze, Earth science data

HTAP-Giovanni is a portal for visualization and analysis of HTAP multi-model experiments.
HTAP-Giovanni User Interface allows selection of second variable for inter-comparison
Examples of HTAP-Giovanni Analysis and Display

Time-averaged ozone for SR1

Time Series
Area-Averaged Time Series (GEOSChem v07)
(Region: 180W-180E, 90S-90N)

Time-avg. difference between SR1 and SR2

Zonal Mean
Zonal Mean for Mass fraction of organic carbon as particulate organic carbon dry aerosol in
Area: (90S-90N,180W-180E)
Charge Questions for the Presenters

What user needs are you focused on now?
   Make AQ data ubiquitous through seamless access, tools
   Specifically to support HTAP, Exceptional Event Rule

What web services are you offering?
   Standard WCS access to model, obs., emission. Data (100+)
   Portable data wrapper templates, tools for WCS, WMS

What services you wish were available? Why?
   More data accessible through standard WCS, WMS
   Services are useless without data to operate on

What infrastructure is most needed?
   Master data catalog, metadata and tools for both
   Catalog-catalog connectivity tools methods

What are barriers to common infrastructure
   Many options, no dominant design, ever-changing environment
   Few incentives to overcome the ‘energy barrier’