



Director's Report

Unidata Policy Committee Meeting

17 April 2006

Boulder, CO

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UCAR Office of Programs
Boulder, CO

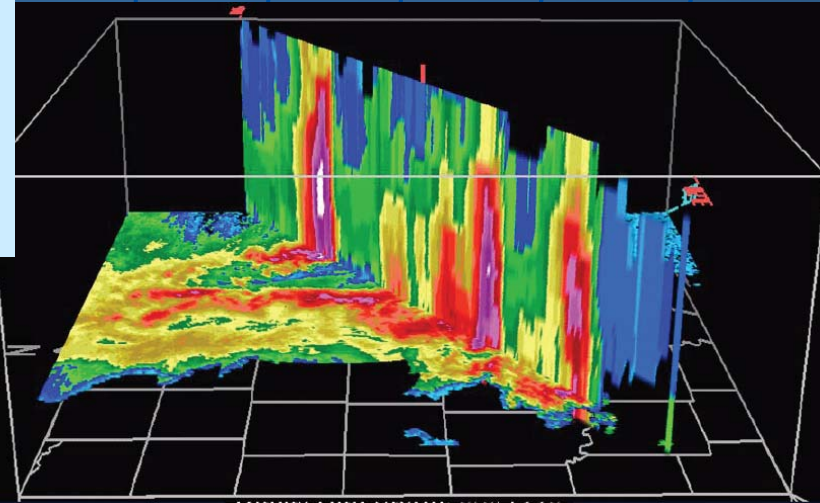
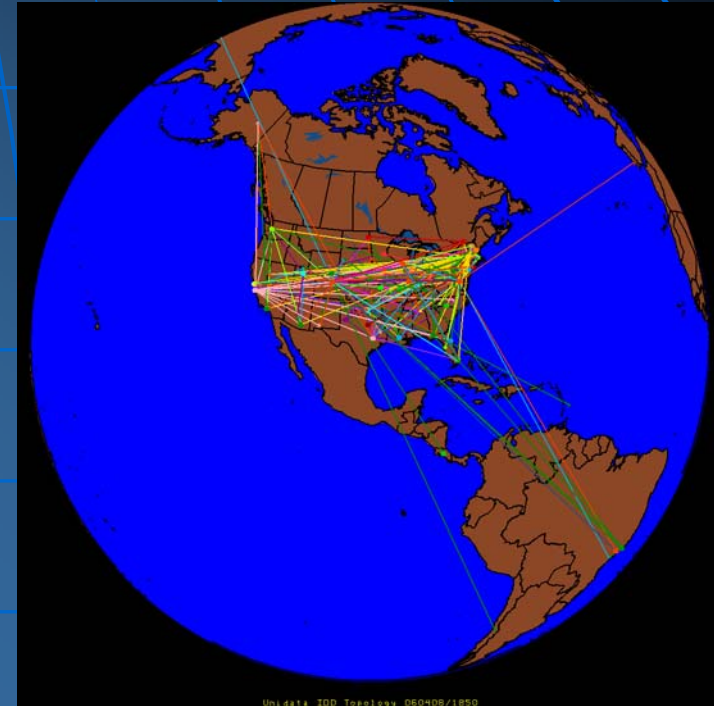


Data Flows

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- About 326 hosts in 171 network domains are now running LDM-6 and reporting real time statistics in the IDD.
 - Tidbit: LDM is running on the HIAPER aircraft as well as at the McMurdo Station.
- The average volume of data flowing through the IDD has increased to about 3.4 GB/hour, with a maximum rate of approximately 5.5 GB/hour.

Data from the National Radar Mosaic & QPE Project at NSSL is now flowing to the UPC in netCDF.

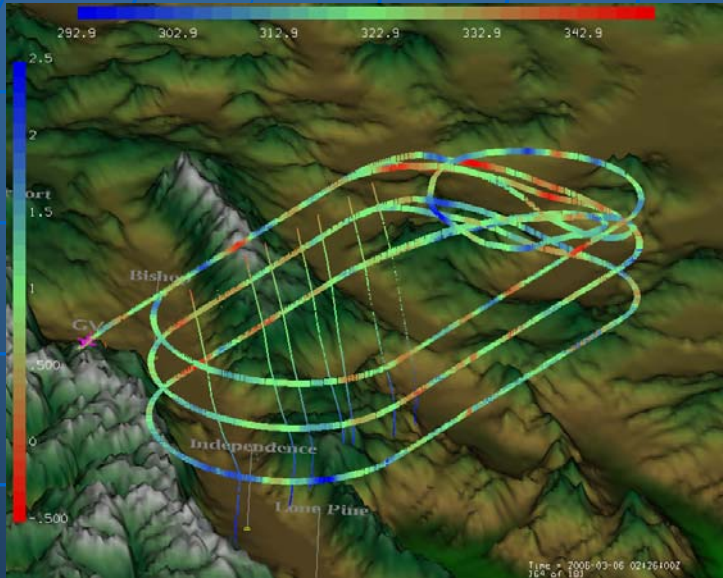


Terrain-Induced Rotor Experiment



(T-REX)

A study of the structure and evolution of atmospheric rotors and closely related phenomena in complex terrain.

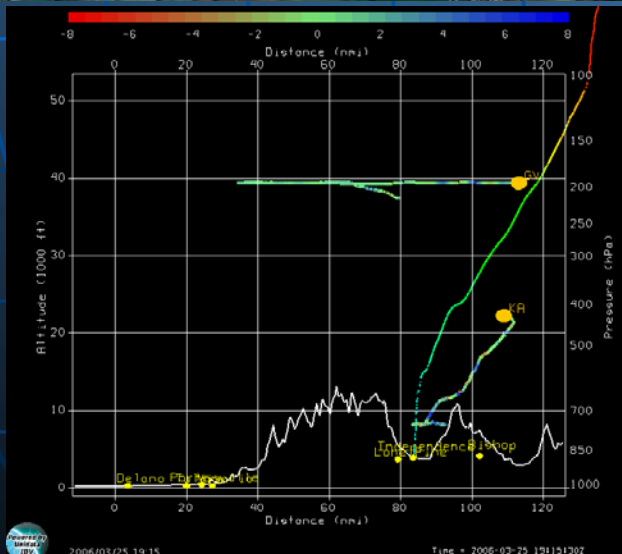


The IDV was selected as the visualization tool for the Ops. Center in T-REX.

The IDV developers worked closely with NCAR/EOL to enhance access to and display of field project data.

New graphing capabilities were added for time series, histogram, scatter, and transect plots. Enhancements were also made on the data access side.

Don Murray and Jeff McWhirter traveled to Bishop in Owens Valley, CA, each for one week, and supported the PIs at the Ops. Center.





Future of Unidata Analysis and Visualization Applications

- The Policy Committee asked the UPC to report on its plans for analysis and visualization software, specifically providing a rationale for the current and future allocation of resources to the development and maintenance of its current mix of packages.
- A Task Force led by Russ Rew was appointed and a report was prepared and circulated to Usercomm. It will be presented to Polcomm next week.
- This topic is on the agenda, so you will hear more later.

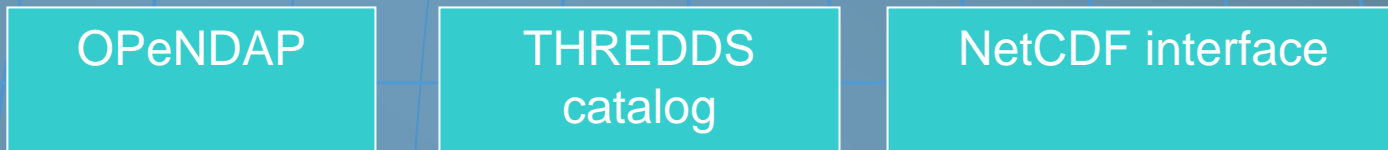
THREDDS Data Server



Primary Interfaces



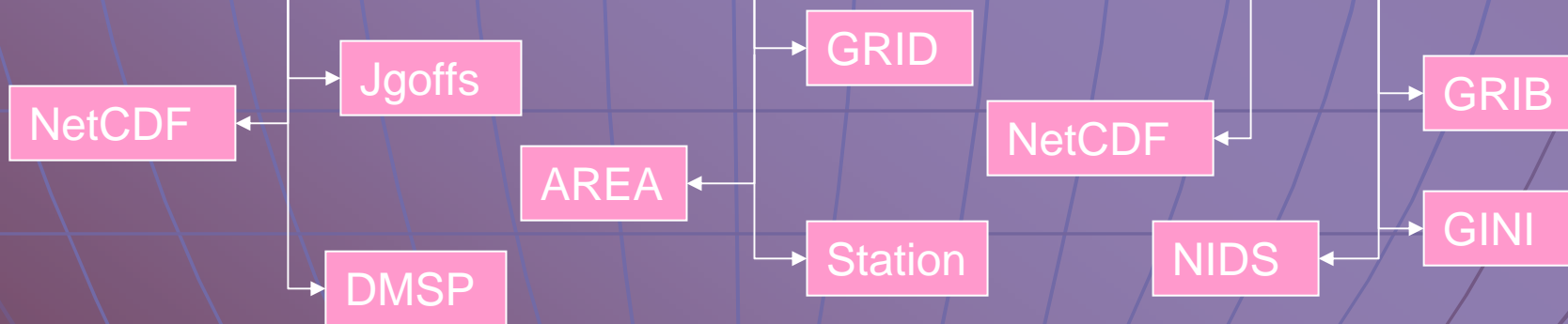
Underlying Interfaces



Local/Remote Services



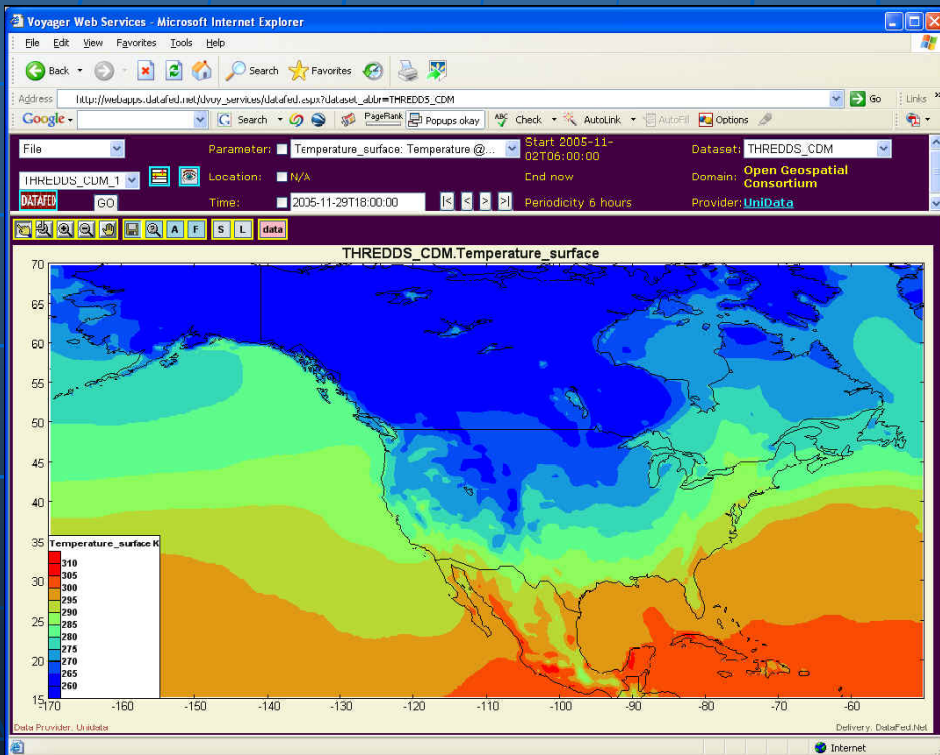
File Formats



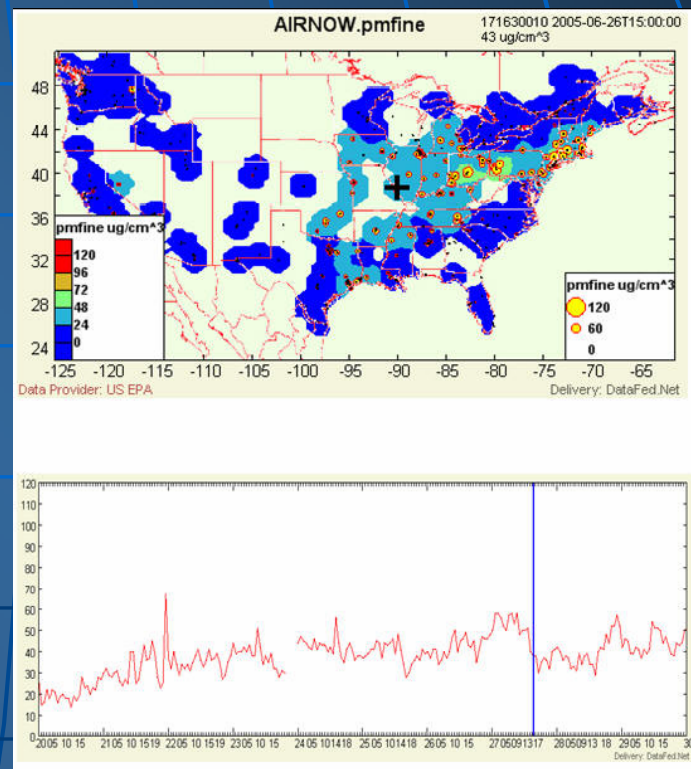


OGC GALEON-IE Examples using THREDDS/WCS Access

NAM Grids via TDS/WCS interface



EPA Air-quality data via WCS interface



Visualizations from DataFed, a client for Earth Science datasets, accessing data via Source: Husar et al., Washington U. the THREDDS/WCS protocol

2006 Users Workshop

- Received full funding for the Triennial Users Workshop;
 - July 10-14, 2006, Boulder, CO
- Theme: Expanding the Use of Models as Educational Tools in the Atmospheric & Related Sciences
- An excellent line up of speakers already in place;
- Planning well underway;
- A draft agenda was prepared by the Users Committee last week and it will be finalized soon.
- The UPC and Usercomm will be doing extensive advertising through multiple channels to promote the workshop in the community (Newsletter, email, contacting colleagues, mailing flyers, etc.)





THORPEX

A Global Atmospheric Research Programme

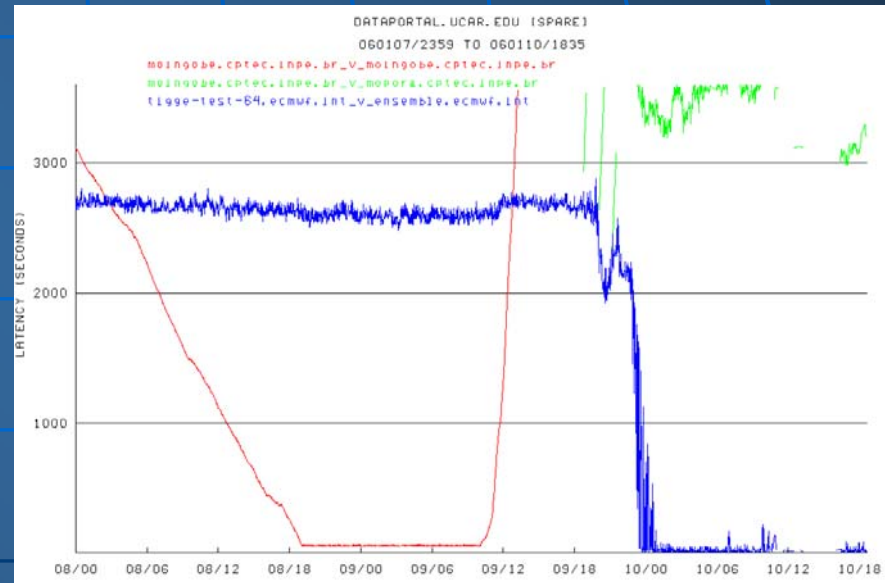
TIGGE

- LDM is being used in the THORPEX Interactive Grand Global Ensemble (TIGGE) project
 - There will be three TIGGE Archive Centers (NCAR, ECMWF, and CMA, Beijing)
 - Each center will host data from operational global models at NCEP, FNMOC, ECMWF, UKMO, BMRC, JMA, CMA, MS Canada, CPTec, Meteo-France, and KMA in GRIB2 Format on native grids.
 - Data from the NCAR archive will be available to community via OPeNDAP/TDS and possibly via the LDM
 - Initially, there will be a 48h embargo on data from certain centers.
- ❖ Enhanced international collaboration between operational centers and universities on the development of ensemble prediction
 - ❖ Development of new methods of combining ensembles of predictions from different sources
 - ❖ Increased understanding of the contribution of observation, initial and model uncertainties to forecast error
 - ❖ Development of a prototype future Global Interactive Forecasting System
 - ❖ ...



TIGGE & LDM

- LDM demonstrated that it was capable of meeting TIGGE demands by sending approximately 17 GB/hr from ECMWF to NCAR/SCD;
- TIGGE data relay tests revealed some LDM-6 deficiencies, which have been solved in the latest distributions, and through some needed TCP tuning;
- Topology for the flow of data yet to be determined;
- TIGGE is regarded as a WMO Information System pilot project;





STORM Funds Case Study Project

- Received \$50K from the UOP Director's STORM Funds;
 - Goal: To develop a prototype, framework, and a guide book for generating next generation case studies with integrated educational content.
- COMET is contributing \$10K from its STORM funds to augment the UOP funding.
- Will leverage Unidata's THREDDS and IDV technologies, and combine them with related learning objects embedded in COMET's educational modules;
- Joanne Graham will manage the project and Jeff Weber is the primary technical developer. Richard Cianflone, an ex-COMET employee, has been hired as a contractor to integrate COMET materials.
- Dr. Brian Etherton, UNC Charlotte, is the scientific lead and will work with the UPC staff;
- The proof of concept will focus on selected aspects of the 2005 Hurricane season.



Unidata Assessment

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- The Unidata Assessment study is progressing well
- The UPC recruited a consultant to conduct the study in Nov. 2005
 - Nelson Consulting Inc.
 - Sarah Nelson, Ed.D.
 - Kate Cumbo, Ph.D.
 - Christopher Nelson, Ph.D. Candidate
- They will conduct a multi-part assessment study, including a community survey, evaluation of software development process, focus groups, retrospective analysis, and notable case-studies
- The community survey will primarily focus on Unidata's *transformative impact on the community*
- By design, the survey is aligned with three primary NSF goals: People, Ideas, and Tools
- More this afternoon from Dr. Sarah Nelson



Community Services

- UPC staff was actively involved in the organization of special sessions at the AGU Fall 2005 Meeting in San Francisco, CA, and the AMS Annual Meeting in Atlanta, GA;
- The organization of these sessions to bring the community together to address cyberinfrastructure/informatics issues, especially in the data & tools area, is becoming an important role for Unidata.

Over 20 papers were presented or coauthored by the UPC staff at these meetings.



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AGU Special Session

- With funding for travel assistance from NSF (ATM and OISE) and in collaboration with Prof. Elen Cutrim, a special session will be organized at the AGU 2006 Joint Assembly to be held in Baltimore, MD on 23-26 May:
 - *Earth and Space Science Cyberinfrastructures: Data, Tools, Distribution and Forecast Systems for International Collaboration*
- **Goal:** to help build a stronger and broader space and Earth science cyberinfrastructure community through international collaboration.
- 22 abstracts received, including 4 invited talks, 11 contributed talks, and 7 posters. Abstracts received from Argentina, Brazil, Costa Rica, Jamaica, Venezuela, and the People's Republic of Boulder.
 - This session is the second most popular section of the *Earth and Space Science Informatics* program of the Joint Assembly.

2006 Equipment Awards



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- Received eight proposals this year (last year we had received 24 proposals)
- Proposals to broaden participation from other disciplines were encouraged
- Total request: \$142K (or \$186K with UCAR overhead); Available funds: \$100K
- Review panel met on 11-12 April, 2006
- Funding is recommended for four projects
- Further details will be provided at a later time.





Staffing Changes

Departures :

- John Stokes, Student Assistant, System Administration Group
 - Graduated from CU;
 - Vacancy was anticipated and planned for;
- Doug Lindholm, LEAD Project
 - Two year term ended in February
 - Responsibilities transferred to Anne Wilson
- Ed Hartnett, netCDF-HDF Project
 - He has accepted a higher-level position at NCAR/SCD with the ESMF Project
 - Ed will continue to work at the UPC at 25% level
 - We will fill this position at some point



Proposal Activity

1. NASA: Gateway for Interoperability of Atmosphere, Land, Ocean, and Modeling Science Data (funded; NASA ACCESS program, Liping Di, PI, Ben Domenico, Co-PI)
2. NSF: Data Access Working Group meeting (funded, Tamara Ledley as PI, Ben Domenico, Co-PI)
3. NSF CEO:P: Air Quality Observatory (pending, Rudy Husar, PI, Ben Domenico, Co-PI)
4. NSF: CEO:P: Real-time Data Cyberinfrastructure Prototype for Collaborative Environmental Observatories (pending, John Orcutt, PI, Ben Domenico, Co-PI)
5. NSF: Data Services Workshops renewal (recommended for funding, Tamara Ledley, PI, Ben Domenico, Co-PI)
6. NSF: Virtual Operations Center (pending, Mike Daniels, PI, Don Murray, Co-PI)
7. NSF: Unidata Users Workshop (funded, Mohan Ramamurthy, with Gary Lackmann and Chris Herbster)
8. NSF/ATM, OISE: Funding for travel to AGU Joint Assembly Special Session (funded, Tom Yoksas, PI, Elen Cutrim, Co-PI)
9. NSF/OPP: An Arctic Observing Network Data Management Service (to be submitted by month's end, Mohan Ramamurthy, Co-PI, with several others)
10. NOAA: IOOS-DMAC Activities (funded, Russ Rew, PI)

In addition, two or three other proposals are in various stages of discussion or development



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State of the Program: A Snapshot

- Community relations : Green
- Data flows : Green
- Software development : Green/Yellow
- Collaborations : Green
- Staffing : Yellow
- Support : Green
- Finances : Green