UCAR International Outreach

Activities: Remote Sensing

Timothy C. Spangler, Ph.D.
Director
A Philosophy

- Provide Information
  - What is coming?
  - What can the sensors do?
  - How will I get the data?

Weather forecasters are not as interested in the engineering decisions as they are in the utility of what is coming.
Demonstrate the utility and use of data
- Detection of specific features (dust, fog, fires, etc.)
- Advantages and improvements over today
- Limitations

Demonstrate the application of the data in weather forecasting
- Model Initialization (water vapor, jet steaks, mountain waves)
- Surface features (fog)
- Situational Awareness (dry lines)
- Disasters (fires, volcanic ash)
Dissemination and Training

- International organizations can’t always handle bandwidth
- Training centers can stimulate use of new satellite data
- Training is needed in multiple languages
- Training is needed with regional applications
Information
Information
Demonstration
Demonstration
Application
Application
MeteoForum: A Pilot Project

- Developed jointly by two UCAR Programs
  - COMET
  - Unidata

- Collaboration with WMO Region III & IV Regional Meteorological Training Centers (RMTCs)

- Funded by UCAR Office of Program (UOP) and COMET Director’s opportunity funds, and NWS office of International Affairs
MeteoForum RMTC Participants

Universidade Federal do Pará
Universidad de Buenos Aires
Universidad de Costa Rica
Caribbean Institute for Meteorology and Hydrology
Universidad Central de Venezuela
MeteoForum Concept

Use the Internet to strengthen RMTCs by:

- Enabling free access to:
  - Rich data resources
    - Real-time flows of observations & model outputs
    - Case-studies with comprehensive data sets
    - Remotely-sensed data including satellite imagery
    - Climate records...
  - Software for data display & analysis
  - Training & reference materials, on Web or CD
- Promoting coordination among RMTCs, universities, and national meteorological services
Dissemination & Training
Using LDM software for \textit{relaying data}, some 160 Unidata universities cooperate to acquire real-time, global, atmospheric & oceanic observations, model outputs, remotely sensed images, etc. This is possible through coordinated \textit{community} effort.
LDM-6 Modernization

- Use TCP guaranteed delivery instead of RPCs
- User-selectable product “chunking”
- Code cleanup for greater efficiency
- Evolution of real-time statistics gathering and display
**IDD-Brazil** Connects to Unidata IDD

- **Current Participants**
  - NSF/ATM
  - University of Miami
  - Unidata Program Center
  - UFRJ
  - UFPA
  - CPTEC/INPE
  - USP

- **Infrastructure**
  - Internet2
  - AMPATH (NSF)
    - FIU
    - Global Crossing
  - RNP
  - ANSP
MeteoForum - Initial Successes

- Establish data distribution network linking Unidata IDD with research and educational institutions in Brazil - **IDD-Brazil**
- Fund translation of select COMET training modules into Spanish (Costa Rica and Argentina)
- Install Unidata-developed NOAAPORT reception system and high-end application workstation at Universidad de Costa Rica
International Partnerships

- Meteorological Service of Canada
  - COMET sponsor
- Australian Bureau of Meteorology
  - Aviation program
  - Module development assistance
- EUMETSAT
  - Joint development for polar orbiting satellites
- EUMETCAL
  - Joint development (*Polar Lows*)
- World Meteorological Organization
  - Travel for WMO participation in MeteoForum
  - Distribution of COMET materials worldwide
Summary

- International outreach activities fall into four categories
  - Information
  - Utility
  - Applications
  - Dissemination and training

- Combined, these activities serve to stimulate and expand the use of space based remote sensing worldwide
Meteorología Satelital:

Casos de Estudio

Con los Datos del Sensor de Radiación del GOES

Escriba una clave de 4 dígitos: