IMAPP: Promoting the Knowledge and Use of Remote Sensing Data
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Who:
NASA, University of Wisconsin-Madison

What:
International MODIS/AIRS Processing Package (IMAPP)
Freely distributed software that enables X-band direct broadcast antenna owners the capability to navigate, calibrate and create scientific products from MODIS, AIRS and AMSR-E instrument data.

- Builds upon our experience in creating and distributing ITPP and IAPP
- Ease of use and robustness are primary development requirements
- Binary executables and source code available

- Current suite of IMAPP products:
  - MODIS Level 2 Products
    - Cloud Mask (MOD35)
    - Cloud Top Properties (MOD06CT)
    - Cloud Optical Thickness, Effective Radius (MOD06OD)
    - Cloud Phase (MOD06 Phase)
    - Atmospheric profiles, TPW and stability indices (MOD07)
    - Aerosol Optical Depth (MOD04)
    - Sea Surface Temperatures
    - Near Infrared Water Vapor
  - AIRS Products
    - Level 1B calibration and geolocation software (from JPL)
    - Level 2 Standard JPL retrievals
    - Level 2 UW-Madison single FOV clear sky retrievals
    - Level 2 UW-Madison all sky retrieval package including:
      - MODIS/AIRS collocation software
      - AIRS cloud mask using the collocated MODIS cloud mask
      - All sky single FOV retrieval package
  - AMSR-E Products
    - Calibration and geolocation software
    - Level 2 Rain Rate
    - Level 2 Soil Moisture
    - Level 2 Snow Water Equivalence
  - Utilities
    - MODIS destriping software to remove artifacts from infrared bands
    - MODIS Google Earth software
      - Software that takes MODIS L1B and creates true color imagery in a format compatible with the Google Earth Geobrowser
    - MODIS/AIRS collocation software
    - Tutorial on how to create reprojected 250m true color imagery
    - AIRS L1B HDFEOS to BUFR utility (with Nigel Atkinson)
  - Numerical Weather Predication and Satellite Data Assimilation
    - DBCRAS 48 km globally configurable model producing standard meteorological products (temp, dewpoint, winds, heights, precip)
    - Also produces forecast satellite IR imagery
    - Assimilates MOD07 TPW and MOD06CT cloud heights to improve the depiction of clouds and precip in the model
    - DBCRAS 16 km NEST that fits within the larger 48 km grid

Why:
Promote the use of Aqua and Terra data for local real-time applications.

Where:
IMAPP home page for software downloads: http://cimss.ssec.wisc.edu/imapp

Where is IMAPP used? 57 different countries:

Workshops:
Teach principles of remote sensing and local applications

Courses taught in China, Australia, Taiwan, Norway, South Africa, and Brazil including 2009 IGARSS South Africa Short Course 4: "MODIS direct broadcast data for enhanced forecasting and real-time environmental decision making."

IMAPP workshop
Sao Paulo, Brazil 2008

Upcoming Releases:
MODIS Bilirectional Reflectance Distribution Function (BRDF) for direct broadcast. June 2010
IMAPP Virtual Appliance