Near-Real-Time Proxy ABI Products for GOES-R User Readiness

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Objectives

Introduce users to Advanced Baseline Imager (ABI) imagery and products in near-real-time but at reduced time and space resolution using simulated data derived from a regional forecast model with chemistry coupled to global chemical/aerosol analyses

Make selected simulated ABI data products available within AWIPS to support Proving Ground activities

Production of Simulated ABI Data

- Weather Research & Forecasting with Chemistry (WRF-CHEM) model is run for CONUS (as defined in GOES-R Product Users’ Guide (PUG)) on 8 km grid with hourly output
- CRTM v2.1 used to compute radiances from WRF-CHEM model output for all ABI bands
- Radiances remapped to 2 km Fixed Grid Format according to PUG conventions, rescaled, then output to CF compliant NetCDF-4 data files
- Data files are run through GEOCAT (GEOstationary Cloud Algorithm Testbed) to generate baseline products (HDF5 output)
- McIDAS-X is used to convert these HDF files to the type of NetCDF files needed by AWIPS II

Baseline products currently available in GEOCAT:
- Cloud mask
- Cloud top height
- Cloud top phase
- Cloud top pressure/temperature
- Daytime cloud optical depth/effective radius
- Legacy temperature/moisture profiles
- Total precipitable water
- Derived stability indices: CAPE, lifted index, K-Index, Total Totals index, Showalter Index
- Derived motion winds
- Fire/hot spot characterization
- Volcanic ash: detection and height
- Cloud and moisture imagery
- Radiances

Remaining work: streamline the conversion of GEOCAT HDF files into AWIPS II-compatible NetCDF files, address color table issues, and include additional ABI baseline products.

Sample Proxy ABI Products

Imagery in McIDAS-V

Tornado Outbreak of January 29-30, 2013

One of the largest outbreaks ever recorded in January
Total of 83 reported tornados; 57 confirmed
Produced one EF3 tornado with one fatality

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