Displaying Imagery and CIMSS Science Products in McIDAS-V

Joleen Feltz, Will Straka, Kaba Bah

In cooperation with CIMSS Scientist and McIDAS Programmers

Tuesday, 8 May 2012: McIDAS Users’ Group Meeting
Acknowledgements

• McIDAS Imagery and Visualization: Tom Whittaker, Tom Rink and Tommy Jasmin

• CIMSS Scientist: Anthony Wimmers, Justin Sieglaff, William Straka, Jason Otkin, Tony Schreiner, Kaba Bah, Elizabeth Weisz, Wayne Feltz, Tom Achtor, Robert Knuteson

• NOAA/NESDIS Satellite Applications Branch: Tim Schmit, Ralph Peterson, Gary Wade
GOES-R ABI BANDS 8-16

Please select any number of products, the date/time you would like to see, and a view method.

DISCLAIMER: THESE PRODUCTS ARE GENERATED ON AN EXPERIMENTAL BASIS. ACCURACY AND TIMELINESS ARE NOT GUARANTEED.
GOES-R ABI BANDS 8-16

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Bundles: Reckless but useful bundle tricks

• When an ID is used:
  – Change or turn off layer labels
  – Access multiple panels in a bundle

• Zoom, change projection/change centering

• Change color scale (enhancement) and range

• Step through an animation, get timestamp information

• Replace data within the bundle
VIIRS Band I05 (11 um), 4/14/2012, 1925Z

Norman, OK Storm Case Study
Accident: Austrian B772 near New York on Sep 12th 2011, turbulence injures 4

by Simon Fradecky, created Tuesday, Sep 13th 2011 11:17Z, last updated Tuesday, Sep 13th 2011 15:32Z.

An Austrian Airlines Boeing 777-200, registration OE-LPB performing flight OS-88 from New York JFK NY (USA) to Vicos (Austria) with 276 passengers, was climbing through FL290 out of New York about 20 minutes into the flight around 18:30L (22:30Z) when the aircraft experienced turbulence causing minor injuries to a passenger and three flight attendants. A doctor on board took care of the injured. The aircraft continued to Vienna for a safe landing about 7 hours later.

The airline reported, that the aircraft experienced brief, weather related turbulences which caused injuries to a passenger and three flight attendants. Two of the flight attendants were able to continue their duties a short time later. A female doctor on board took care of all injured and monitored them throughout the flight. All injured were able to disembark normally, the passenger was taken to a hospital as a precaution.

A passenger on board reported quite some turbulence, a number of people on board not wearing their seat belts hit the cabin ceiling with their heads and sustained minor injuries like concussions and lacerations.

Tropopause Fold Turbulence Product: Anthony Wimmers (CIMSS)
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High-level algorithm overview

- Compute box-averaged 11 micron brightness temperature (BT) for current time and previous time, using specific categories from GOES Cloud Typing product

- Unfiltered Cloud Top Cooling (CTC) Rate is calculated by differencing box average 11 micron BT for current time from previous time

- Large/small box approach eliminates most of false CTC due to cloud motion (and additional checks reduce false cooling further)

- Combine cloud-top cooling information with cloud-top microphysical (phase/cloud type) transitions for convective initiation nowcasts

Reference: Sieglaff et al., 2011
Justin Sieglaff, Lee Cronce, Dan Hartung, Wayne Feltz (CIMSS)
Files without time as a dimension
• Time information in metadata and filename.
• NCML allows the user to assign time information to the grids.
• Grids must share same dimensions and navigation.

Data without a time dimension can be useful:
• Show multiple polar orbiting granules in one frame
• When comparing with data that does not share a timestamp (e.g. comparison of geostationary to polar orbiting imagery)
It is possible to create a time series of polar orbiting data
• Tom Rink wrote a formula which allows the user to supply a list of flat fields and a list of times from which an image sequence is created
• Have only used it in the jython shell because an array of grids and times is used.

Could this easier?
• Allow the user to assign a time either manually, automatically from the metadata, or filename pattern matching
• Allow user to assign a time to a single image/grid
• Make this available from the field selector

Should it be easier?
Public Outreach

NSSL WRF Simulation of Thunderstorm Complex: Jason Otkin (CIMSS)
Calibration/Validation

- findWithinRange
- createAreaField
- computeSum
- maskWithinRange
McIDAS-X Products in McIDAS-V

GOES Sounder DPI: Lifted Index/Cloud Top Temperature
GOES Sounder DPI: Gary Wade, Tim Schmit, Tony Schreiner
NEARCAST Convective Instability: Ralph Peterson

UWAIRS Dual Regression Algorithm: Elizabeth Weisz
McIDAS-V Forums
http://dcdb.ssec.wisc.edu/mcidasv/forums/

CIMSS Proving Ground Website
http://cimss.ssec.wisc.edu/goes_r/proving-ground.html

GOES Sounder DPI
http://cimss.ssec.wisc.edu/goes/rt/sounder-dpi.php

International MODIS/AIRS Processing Package
http://cimss.ssec.wisc.edu/imapp/