AIRS Mission Support from GES DISC

Goddard Earth Sciences Data and Information Services Center (GES-DISC)

Jennifer Wei
Thomas Hearty, Andrey Savtchenko, Feng Ding, Ed Esfandiari, Mike Theobald, Bruce Vollmer, Steve Kempler

Sounder Science Team Meeting
April 21-23, 2015
Status Quo

• GES DISC Web Support for AIRS (Table)
  - Status on AIRS L1C, CO₂
  - Status on AIRS V5, V6.
  - Status on AIRS Near Real Time (NRT).

• Metrics for V5/V6 usage/support

• Challenges to user community
  - Multiple Versions
  - L3 temporal information
  - Multiple Browse Services

• Plans for New Services and Collaboration
# GES DISC Web Support for AIRS

<table>
<thead>
<tr>
<th></th>
<th>GCMD</th>
<th>ECHO</th>
<th>GES DISC Web search</th>
<th>Subsetting</th>
<th>OPeNDAP</th>
<th>netCDF</th>
<th>G3*</th>
<th>G4*</th>
<th>WCS/WMS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>V5</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Level 2</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Level 3</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>CO₂</strong></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>NRT (L1b)</strong></td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>V6</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1c</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Level 2</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Level 3</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>NRT (L2)</strong></td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Metrics for Level 3 V5/V6 Usage
Challenges to users

- **Multiple Versions**
  - V5 and V6 services
  - V6 products: STD vs IR-only
  - V6 L1C usability
  - Inconsistent V5 CO$_2$ series

- **AIRS L3**
  - Begin Time for Ascending/Descending Grids
  - Mean Time at a grid cell
  - L3 usability (TqJ and Regular) → GES DISC “Lite Products”

- **Multiple browsing services**
  - GES DISC NRT ImageViewer
  - Provides images to Global Imagery Browse Services (GIBS)
Challenges to users

- Multiple Versions
  - V5 and V6 services
  - V6 products: STD vs IR-only
  - Inconsistent V5 CO\textsubscript{2} series
  - V6 L1C usability
Provides V5 and V6 services - Giovanni

http://giovanni.gsfc.nasa.gov/giovanni/
#service=INTERACTIVE_MAP&starttime=&endtime=&bbox=-180,-90,180,90&variableFacets=dataProductPlatformInstrument%3AAIRS%3B
V6 products: STD vs IR-only

Level 2

Level 3
Inconsistent V5 CO$_2$ Collections

- Differences between AIRS/AMSU vs AIRS/IR are very small. We should have one consistent series instead.
Challenges to users

- AIRS L3
  - Begin Time for Ascending/Descending Grids
  - Mean Time at a grid cell
  - TqJoint vs. STD usability
1. VIS radiances (false color map)  
2. CO, Bt_diff_SO2, Prata_SO2  
3. Dust score  
4. Precipitation  
5. Temperature and Relative Humidity at 850hPa, 700hPa, 600hPa, 500hPa, and 400hPa
GIBS = EOSDIS’ Global Imagery Browse Services

GES DISC Big Earth Data Initiative (BEDI)

GIBS = EOSDIS’ Global Imagery Browse Services

August 13, 2010

“Get me the data that I am looking at.”

GES DISC

OPeNDAP Server

totCO data

Giovanni

ECHO

TIME=2010-08-13

• Societal Benefit Areas
• AIRS Level 3 variables
• Maybe one variable from Level 2
GES DISC Developing Capability

- Multiple measurements
- Different shapes
- Tools developed for the user community
Example: Co-locate MODIS/OCO-2

MODIS/Aqua glint (grey ellipse), OCO glint swath (black thick line), MODIS/Aqua nadir (red line), 2010-09-24
Thank you.

Question? Jennifer.C.Wei@nasa.gov