Interactive Web-based Tools for Comparing and Retrieving Satellite-derived Cloud Properties during CRYSTAL-FACE

L. Nguyen, P. Minnis, W. L. Smith, Jr., NASA Langley Research Center, Hampton VA
Corresponding author email: L.Nguyen@larc.nasa.gov

Introduction
The NASA CRYSTAL-FACE (C-F) field experiment was an extensive measurement campaign conducted in Florida during July 2002. C-F resources include six aircraft platforms, two ground sites, several satellites, and hundreds of instruments. These resources present many opportunities to compare coincident cloud properties produced with the Visible Infrared Solar-Infrared Split Window Technique (VISST) cloud algorithm.

The VISST (P. Minnis et al.) satellite derived cloud products are available on the NASA Langley Satellite Group’s website. This poster describes web-based tools to access the cloud products that are available online at http://www-angler.larc.nasa.gov/crystal/. These tools enable anyone with a web browser to access, retrieve, and display an array of satellite products, and is designed to enhance comparison with surface based and aircraft in-situ measurements.

Web-based Tools to Access VISST Cloud Products
- Online web browser for searching and displaying satellite products
- Interactive Java-based VISST cloud analysis tool and viewer
- Web tool to match cloud products along all C-F aircraft flight tracks
- Web tool to retrieve cloud products at the C-F Western and Eastern Ground Sites
- Output format includes GIFS, ASCII, NetCDF, & McIDAS Areafiles

VISST Cloud Products Available Online
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Online Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6 um reflectance</td>
<td>Ice Water Path</td>
</tr>
<tr>
<td>8.7 um reflectance</td>
<td>Effective Cloud Temperature</td>
</tr>
<tr>
<td>10.8 um brightness</td>
<td>Effective Cloud Pressure</td>
</tr>
<tr>
<td>12.0 um brightness</td>
<td>Cloud-Base Pressure</td>
</tr>
<tr>
<td>3.7 um brightness</td>
<td>Cloud-Top Height</td>
</tr>
<tr>
<td>IR Index</td>
<td>Cloud-Top Height</td>
</tr>
<tr>
<td>Phase / Scene-ID Map</td>
<td>Cloud-Top Height</td>
</tr>
<tr>
<td>Optical Depth</td>
<td>Cloud-Base Height</td>
</tr>
<tr>
<td>Effective Cloud Pressure</td>
<td>Broadband Longwave Flux</td>
</tr>
<tr>
<td>Cloud-Base Height</td>
<td>Broadband Longwave Flux</td>
</tr>
<tr>
<td>Cloud-Top Height</td>
<td>Liquid Water Path</td>
</tr>
<tr>
<td>Effective Cloud Temperature</td>
<td>NEXRAD Radar BREF</td>
</tr>
</tbody>
</table>

Tools for Retrieving GOES-8 Derived Cloud Properties over C-F Ground Sites and Along Aircraft Flights

GOES-8 and NEXRAD Imagery
Animation of GOES-8 15m Vis Imagery with NEXRAD Overlay

Interactive Web-based Analysis Tool: The VISST Cloud Product Viewer
- Uses Java and VisAD components
- Supported platforms: SUN, SGI & PC
- Statistical tools and plots

C-F Aircraft flight track Overlay on GOES
MODIS Derived Cloud Products
- Cloud Optical Depth From MODIS (2002/204 16:40Z)
- Effective Ice Diameter From MODIS (2002/204 16:40Z)

GOES-8 Derived Cloud Product Animation

Animation of GOES-8 Derived Cloud Products