

GEOCAT

The Geostationary Cloud Algorithm Test-bed

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Introduction

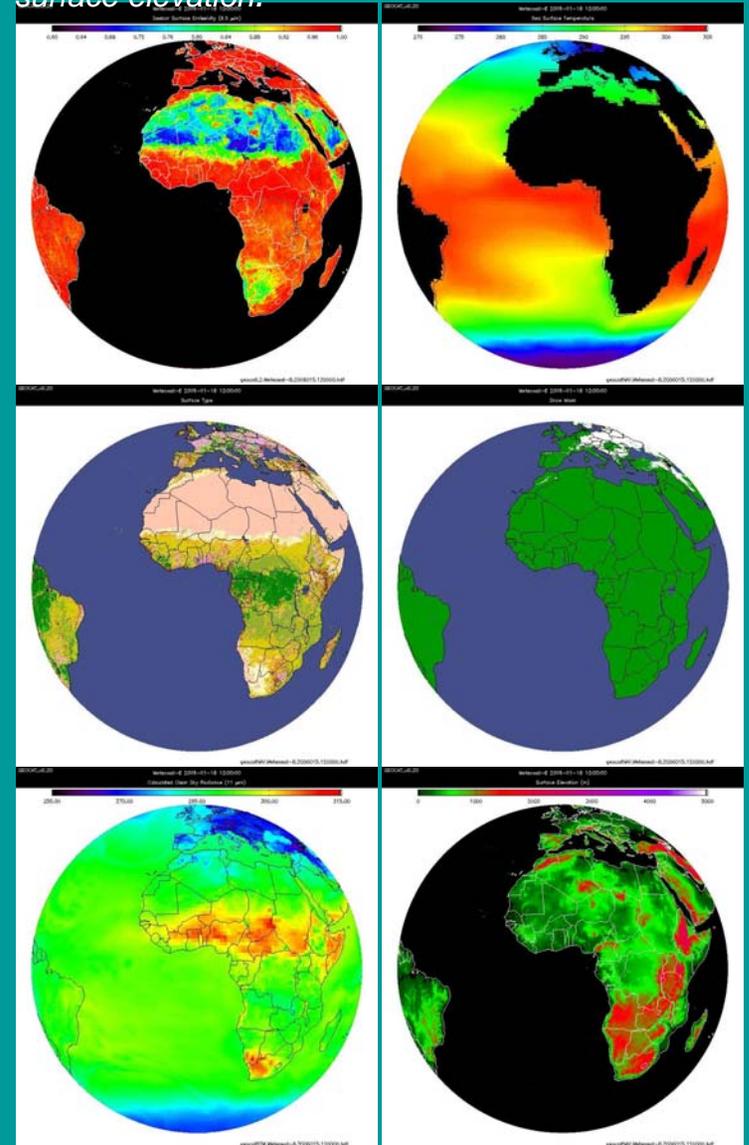
- Our operational AVHRR system (CLAVR-x) demonstrated the benefits to algorithm development of having a multitude of ancillary data including RTM, NWP and high-res surface fields available in upfront global memory.
- One missing part was the ability to run multiple versions of the same algorithm in order to make algorithm testing and verification studies more efficient. Running multiple algorithms simultaneously while using the same input allows us to isolate algorithmic differences.
- LEOCAT was developed under our NPOESS/IGS project as a VIIRS algorithm test-bed based on MODIS data. LEOCAT has been adopted by the NPP PEATE.
- GEOCAT was developed for the GOES-R AWG cloud application team but has been used by several non-cloud AWG algorithms.

Characteristics of GEOCAT

- GEOCAT provides a mechanism implementing an arbitrary algorithm via entries into an xml file. As long as the inputs are available and the outputs are recognized by GEOCAT, the algorithm can be included.
- The AWG cloud team's algorithms require significant amounts of ancillary data to generate the required RTM parameters. GEOCAT has developed efficient routines to make this available to all pixels.
- The current list of ancillary data-sets include GFS, GDAS, IMS snow, SEEBOR surface emissivity, digital elevation, surface type, land mask, coast mask, volcano mask.
- By having all of this information available, GEOCAT has been shown to be an efficient test-bed for non-cloud AWG algorithms.
- GEOCAT also has the capability to handle temporal demands and scan-line overlap.

Example images of ancillary data for SEVIRI

8.5 μm surface emissivity; OISST; Surface type; IMS snow; GFS surface temperature; surface elevation.



Accomplishments

- Basis of all AWG cloud application team work. (See comparison of two cloud type algorithms on the bottom)
- Vehicle for several other non-cloud algorithms (fire, ozone, SO₂, ash, winds)
- GEOCAT has been demonstrated on MTSAT, GOES-10, GOES-11, GOES-12 and MSG-1.
- GEOCAT is running in real-time on GOES-11 and GOES-12.

SEVIRI RGB

Cloud Type: MODIS Algorithm

Cloud Type: AWG Algorithm

