MODIS BRDF/Albedo Validation Efforts

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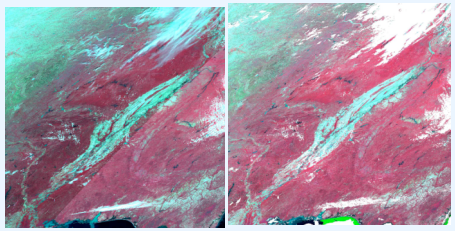
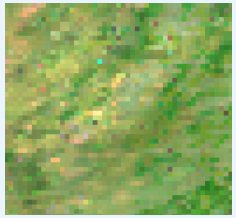
The MODIS BRDF/Albedo Products

have been available at 1km resolution since March 2000 with data from the Terra platform, and as a combined product since July 2002 with data from both the Terra and Aqua platforms. The retrieval algorithm utilizes all high quality, atmospherically corrected, cloud free surface reflectances acquired over a 16 day period and a semi-empirical kernel model to characterize the BRDF of the location. Only when insufficient data to sample the anisotropy is available is a lower quality backup algorithm employing *a priori* estimates of the surface BRDF based on landcover and season used. The entire data set is being reprocessed at 500m resolution with improved upstream atmospheric correction and cloud masking. Retrievals will be made every 8 days (based on the last 16 days) to increase the possibility of obtaining high quality results. Validation of the V005 product has begun starting with the Chequamegon Ecosystem Atmosphere Study Site - ChEAS, Park Falls, WI (where a new albedometer has just been installed on the tall tower for the 2006 growing season) and at the Atmospheric Radiation Measurement (ARM) Southern Great Plains SGP site (long term Baseline Surface Radiation Network (BSRN) site).

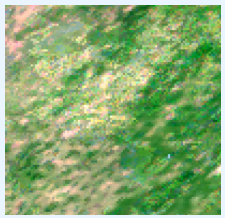
ARM/SGP Central Facility and Extended Facility #15



The reduced variability and consistency of a false color, view-angle-corrected NBAR image (Day 149, 2003) on the right versus the directional surface reflectances from adjoining swaths for that same day (MOD09) on the left.



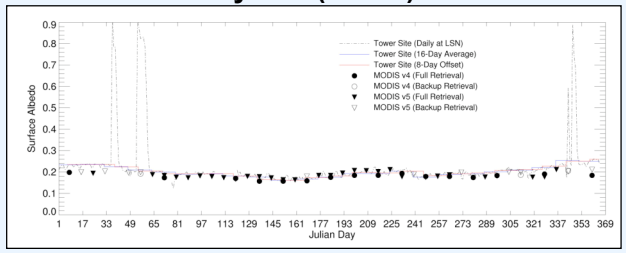
1km imagery over Extended Facility #15.



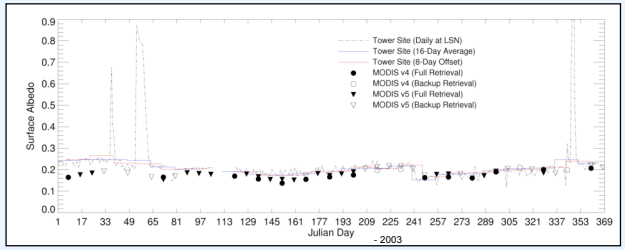
The same location using 500m data.

White Sky Albedo from the MODIS 1km product, MCD43B3, a true-color image in sinusoidal projection, nominal date 5/9/2003.

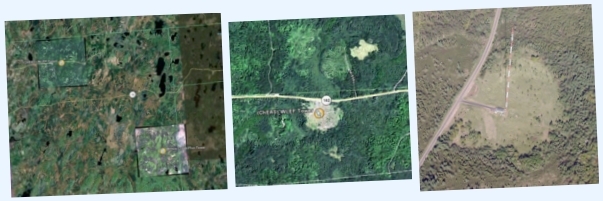
Extended Facility #15 (EF-15): Time Series



Central Facility (CF): Time Series



Upscaling Efforts at Cheas, WLEF 406m tall tower, Park Falls, WI



Satellite imagery at various spatial resolutions to be aggregated to 500m spatial resolution. Co-located ground measurements, such as at ChEAS, are useful for calibration, validation, and upscaling physical processes.

1km imagery over Park Falls, WI, 8/13/2005.

The same location using 500m data.

http://www-modis.bu.edu/brdf/