MOD07 atmospheric profile algorithm updates for Collection 6

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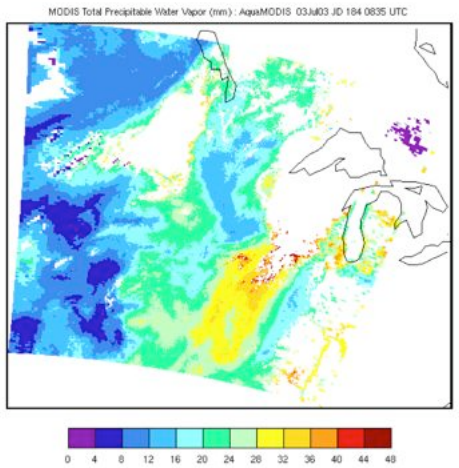
- Update the radiative transfer model to CRTM (from prototypeCRTM)
- Apply zero bias adjustment in the radiative transfer calculation
- Apply H2O/CO2 channel spectral shifts for Aqua (Tobin et al., 2006, JGR)
- Update NedT for both Terra and Aqua
- In the training database update surface emissivity spectra to the current version
- Making the Aqua and Terra DAAC code uniform
- Modify the TPW Low and TPW high products to be able to calculate 3 layer water vapor means. The new layers are: (Low) sfc-680 and (high) 440-TOP (10hPa)
- Increase number of QA/QC flags, QA usefulness and Confidence flag bug is fixed
- Output file label updates: adding offset/scale factor usage, list of pressure levels, K-index valid range fixed, surface temperature changed to skin temperature, mixing ration profile added
- The new products are tested over the SGP ARM cart site with MWR and GOES and over some selected global days with TOMS and AIRS data.

Effect of Aqua H2O/CO2 channel spectral shifts on MYD07 TPW compared to MWR TPW over SGP ARM cart site

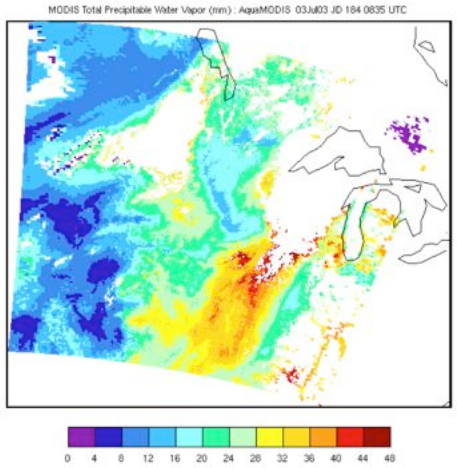
Satellite	SRF shift	DRY (TPW<15mm) (228)		WET (TPW >=15mm) (89)		ALL (317)	
		bias[mm]	rms[mm]	bias[mm]	rms[mm]	bias[mm]	rms[mm]
Aqua	No	-0.2	2.3	4.6	5.7	1.1	3.6
Aqua	Yes	-0.8	2.5	2.3	3.8	0.1	3.0

Satellite	SRF shift	DRY (TPW<15mm) (217)		WET (TPW >=15mm) (128)		ALL (345)	
		bias[mm]	rms[mm]	bias[mm]	rms[mm]	bias[mm]	rms[mm]
Terra	No	-1.3	2.4	2.3	4.0	0.0	3.1

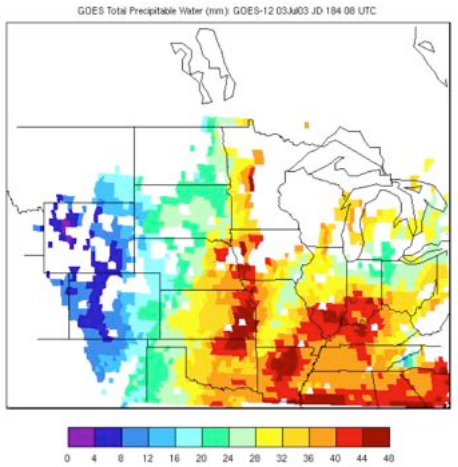
TPW field at July 3, 2003 at 0800 UTC



MYD07 TPW no shifts



MYD07 TPW with shifts



GOES TPW