Proposed MODIS-Atmosphere Collection 006 Changes Document

L2 Atmospheric Profiles Version 29 (12/26/2013)

Status Keyword List: [Not Started], [Investigating], [Coding], [Testing], [Dropped] or [Implemented]. Note: If no status keyword appears after an item, the status was not communicated to the author of this document.

Atmospheric Profile (07_L2) (Updated 12/26/2013) Eva Borbas

- Update surface emissivity database to current version. [Status: Implemented]
- Training data improvements regarding skin temperature assignment. [A skin temperature sensitivity study was completed, no change will be made.] [Status: Implemented]
- Update NedT for both Terra and Aqua. [Status: Implemented]
- Investigate the dry bias in Aqua TPW for moist cases and make adjustments to improve. [Status: Implemented]
- Apply zero bias in the radiative transfer calculation. [Status: Implemented]
- Introduce H2O/CO2 channel spectral shifts for Aqua and Terra. [Status: Implemented]
- Update the radiative transfer model from prototypeCRTM to CRTM V1.2 (Aqua) and V2.0.2 (Terra). [Status: Implemented]
- Perform a more thorough evaluation of the ozone product through intercomparisons with TOMS and AIRS and make adjustments to algorithm. [Status: Implemented]
- Assess the TPW Low and TPW High products and possibly change the levels of integration to make them more useful. [Status: Implemented]
- Improve QA/QC flags and screening for bad input MOD02L1B data. [Status: Dropped] The QA plan document has been updated.
- Examine the MOD07 Level 3 products for consistency with other long term datasets. [Status: Implemented]
- Making Aqua and Terra DAAC code uniform. [Status: Implemented]
- Look into whether we can include all profiles at 101 levels in direct broadcast or at the DAAC [Status: Dropped], and adding water vapor mixing ratio profiles. [Status: Implemented]
- Output file label updates: [Status: Implemented]
    - Change “Surface Temperature” to “Skin Temperature” in the output file
    - Adding pressure levels, offset/scale factor usage to the output file
    - Fix K-index valid range in the output file
- Bug fixed relates to the dewpoint temperature (TD) and mixing ratio profile products at the top levels (above 50 hPa) where the moisture is minimal. In C6 version the TD and mixing ratio is replaced with a missing value whenever the mixing ratio is less then 0.001 g/kg

- Have the Atmosphere Profile development team fix (remove the noise in fill regions) all 07_L2 Atmosphere Profile Usefulness and Confidence QA Flags. This problem might stem from the QA flags not being initialized as 0's; but this is unclear. [Fixed, Status: Implemented]

Collection 5 Collection 6 (fixed QA)