

Collection-6 Terra Product Descriptions: MOD04_L2

Last update: February 6, 2015

Data Set Short Name:

MOD04_L2

Data Set Long Name:

MODIS/Terra Aerosol 5-Min L2 Swath 10km

Platform:

Terra

Instrument:

MODIS

Product Description:

The MODIS level-2 atmospheric aerosol product (MOD04_L2) provides full global coverage of aerosol properties from the Dark Target (DT) and Deep Blue (DB) algorithms. The DT algorithm is applied over ocean and dark land (e.g., vegetation), while the DB algorithm in Collection 6 (C6) covers the entire land areas including both dark and bright surfaces. Both results are provided on a 10x10 pixel scale (10 km at nadir). Each MOD04_L2 product file covers a five-minute time interval. The output grid is 135 pixels in width by 203 pixels in length. Every tenth file has an output grid size of 135 by 204 pixels. MOD04_L2 product files are stored in Hierarchical Data Format (HDF-EOS).

Based on C5 validation studies, a number of Science Data Sets (SDSs) have been deleted with C6 from the DT product (Angstrom_Exponent_Land, Optical_Depth_Small_Land, etc.) while a number of SDSs have been renamed or added. A number of algorithm changes have led to significant changes in regional aerosol product statistics. For C6, the DT algorithm team now provides a new 3 km spatial resolution product intended for the air quality community; this is provided in a separate file (M*D04_3K).

In C5, the DB algorithm was limited to only bright targets. With C6, the DB team has expanded coverage to include both bright targets and vegetated regions, using NDVI information in addition to a precalculated surface reflectance database. New DB products for C6 include an estimate on the aerosol retrieval uncertainty to assist with error analyses as well as a best estimate SDS containing the aerosol optical thickness data with quality assurance flags already applied (SDS names Deep_Blue_Aerosol_Optical_Depth_550_Land_Estimated_Uncertainty and Deep_Blue_Aerosol_Optical_Depth_550_Land_Best_Estimate respectively). In addition to separate DT and DB retrievals, the C6 product now provides a merged (SDS) that combines both types of retrievals (SDS name AOD_550_Dark_Target_Deep_Blue_Combined). This SDS uses a combination of scene NDVI and retrieval Quality Assessment (QA) assignments to select one of the retrievals (if any) or an average of the two retrievals. Ocean retrievals from the DT algorithm are also provided if they have a sufficiently high retrieval QA value.

Additional information at http://modis-atmos.gsfc.nasa.gov/MOD04_L2.

Production Frequency:

~144 files per day

Spatial Coverage:

Global

Spatial Resolution:

10 km at nadir

File Size (MB):

~2

Related Links:

http://modis-atmos.gsfc.nasa.gov/MOD04_L2/
(MODIS Atmosphere Aerosol Product site)

Citation:

We kindly request that you cite the use of this data set in a publication using the following citation.

Author (PI), et al., 2015. Product name as given on atmo web site. NASA MODIS Adaptive Processing System, Goddard Space Flight Center, USA: [link as given on atmo site].

For example:

Levy, R., Hsu, C., et al., 2015. MODIS Atmosphere L2 Aerosol Product. NASA MODIS Adaptive Processing System, Goddard Space Flight Center, USA: http://dx.doi.org/10.5067/MODIS/MOD04_L2.006

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