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Surface Reflectance Daily L2G Global 250m

MOD09GQ

The MODIS Surface Reflectance products provide an estimate of the surface spectral reflectance as it would be measured at ground level in the absence of atmospheric scattering or absorption. Low-level data are corrected for atmospheric gases and aerosols, yielding a level-2 basis for several higher-order gridded level-2 (L2G) and level-3 products.

MOD09GQ provides Bands 1 and 2 at a 250-meter resolution in a daily gridded L2G product in the Sinusoidal projection. Science Data Sets provided for this product include reflectance for Bands 1 and 2, a quality rating, observation coverage, and observation number. This product is meant to be used in conjunction with the MOD09GA, where important quality and viewing geometry information is stored.

Version-5 MODIS/Terra Surface Reflectance products are Validated Stage 2, meaning that accuracy has been assessed over a widely distributed set of locations and time periods via several ground-truth and validation efforts.

Change Points of Interest

- Reduced number of data products: MOD09GST, MOD09GHK, MODMGGAD, MODPT1KD, and MODPTHKM encapsulated within MOD09GA
- Revised methodology for choosing first layer observation
- Reduced file volume: internal compression

Short Name: MOD09GQ

This is an NDVI image created by using two MODIS 250-meter reflectance data acquired March 28, 2007 over Mexico. (h08v06).

🔍 Version 005

Overview

Layers

Science Data Sets for MODIS Terra Surface Reflectance Daily L2G Global 250m SIN Grid V005 (MOD09GQ):

Science Data Sets (HDF Layers) (5)	UNITS	BIT TYPE	FILL	VALID RANGE	MULTIPLY BY SCALE FACTOR
num_observations: number of observations within the pixel	None	8-bit signed integer	-1	0–127	na
250m Surface Reflectance Band 1 (620-670 nm)	Reflectance	16-bit signed integer	-28672	-100–16000	0.0001
250m Surface Reflectance Band 2 (841-876 nm)	Reflectance	16-bit signed integer	-28672	-100–16000	0.0001
250m Reflectance Band Quality	Bit Field	16-bit unsigned integer	2995	0–4096	na
obs_cov: percentage of the grid cell area is covered by the observation	Percent	8-bit signed integer	-1	0–100	(0.001) 0.009999999776482582

The QA information below is excerpted from an HDF-EOS file of the MODIS Surface Reflectance product MOD09GQ.

Table 1: MOD09GQ.005 250-meter Surface Reflectance Data QA Descriptions (16-bit)

Bit No.	Parameter Name	Bit Comb.	Sur_refl_qc_250m
0–1	MODLAND QA bits	00	corrected product produced at ideal quality all bands
		01	corrected product produced at less than ideal quality some or all bands
		10	corrected product not produced due to cloud effects all bands
		11	corrected product not produced due to other reasons some or all bands may be fill value [Note that a value of (11) overrides a value of (01)].
2–3	cloud state	00	clear
		01	cloudy
		10	mixed
		11	not set; assumed clear
4–7	band 1 data quality four bit range	0000	highest quality
		1000	dead detector; data interpolated in L1B
		1001	solar zenith >= 86 degrees
		1010	solar zenith >= 85 and < 86 degrees
		1011	missing input
		1100	internal constant used in place of climatological data for at least one atmospheric constant
		1101	correction out of bounds, pixel constrained to extreme allowable value
		1110	L1B data faulty
		1111	not processed due to deep ocean or clouds
8–11	band 2 data quality four bit range		SAME AS BAND ABOVE
12	atmospheric correction performed	1	yes
		0	no
13	adjacency correction performed	1	yes
		0	No
14–15	spare (unused)	-	---

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Data Set Characteristics

Temporal Coverage	February 24, 2000 -
Area	~10 x 10 lat/long
File Size	280 MB compressed
Projection	Sinusoidal
Data Format	HDF-EOS
Dimensions	4800 x 4800 rows/columns
Resolution	250 meters
Science Data Sets (SDS HDF Layers)	5

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