NASA GES DISC Level 2 Aerosol Analysis and Visualization Services

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NASA/Goddard Earth Sciences Data and Information Services Center (GES DISC)

DQViz. (Data Quality Visualization)
MAPSS (Multi-sensor Aerosol Products Sampling System)
MAPSS_Explorer (Multi-sensor Aerosol Products Sampling System Explorer)

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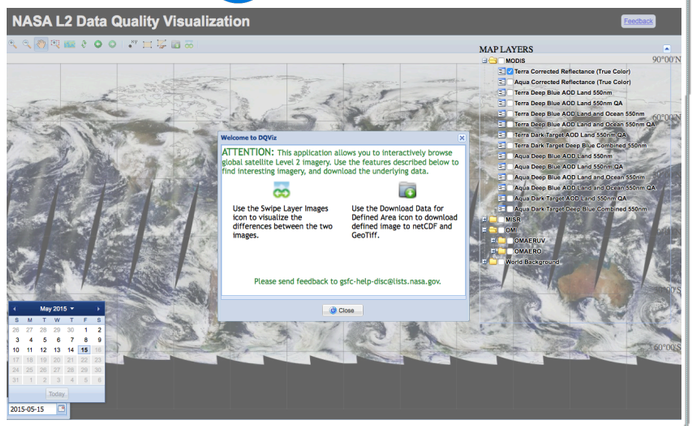
DQViz



Help Science Team Users to Visualize Specific Scene

- *Identify unique scenes*
- *Quality screening criteria according to algorithm recommendation*
- *Visualize different retrieval algorithms*
- *Cross platform/satellite inter-comparison*

Help Research Community Users to Understand Satellite Data Quality via Visualization

- *Importance of Quality Flags by Science Team Recommendation*
- *Importance of Data Lineage (Original and Processed Data Files)*
- *Episodic Event Viewer (Spatial Scale Independent)*

Interoperable: Multiple output formats

- ***netCDF***
- ***GeoTiff***

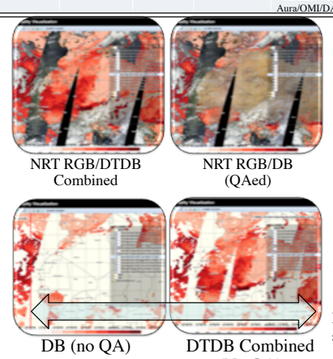
- ***See detail infrastructure in IN53A-1819: Exploring NASA GES DISC Data with Interoperable Services***

Product Data PD

Sensor	Platform	Spatial Resolution (Level 2)	Equator crossing time*	Data period	Dataset DOI
MODIS	Terra	10x10 km	10:30 am 1:30 pm	Jan'00- Jul'02-	10.5067/MODIS/MOD04_L2.006
	Aqua				10.5067/MODIS/MYD04_L2.006
MISR	Terra	17.6x17.6 km	10:30 am	Jan'00-	10.5067/Terra/MISR/MIL2ASAE_L2.002
OMI	Aura	13.7x23.7 km	1:38 pm	Oct'04-	OMAERUV: 10.5067/Aura/OMI/DATA2004) OMAERO: 10.5067/Aura/OMI/DATA2001)

FEATURES

TERRA MODIS



NRT RGB/DTDB Combined

NRT RGB/DB (QAed)

DB (no QA)

DTDB Combined (No QA)

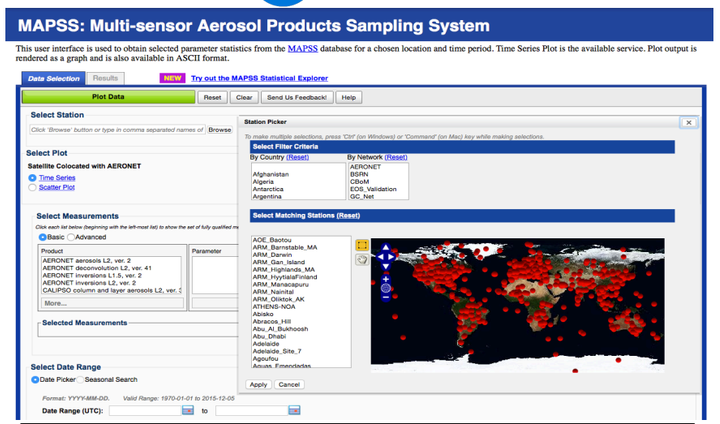
Overlay RGB on L2 retrieval image

Zoom in/out

Sliding through scenes

Download scene data

MAPSS



Help Basic Users

- *Provide available aerosol products*
- *Science recommended sampling for aerosol at each in-situ site*
- *Provide a basic subset statistics (Ndat, Nval, Cval, Mean/Median/Mode, stddev)*
- *Customized CSV files with selection*

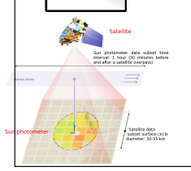
Help Advanced Users

- Provide spatio-temporal variability (slope of fitted line, Azimuth of slope, multiple correction coeff.)
- Provide additional subset information(Geometry, Data Provenance, QA/QC)

Reference

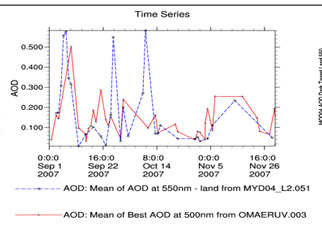
- *Petrenko, M., Ichoku, C., and Leptoukh, G.: Multi-sensor Aerosol Products Sampling System (MAPSS), Atmos. Meas. Tech., 5, 913-926, doi:10.5194/amt-5-913-2012, 2012.*
- *http://disc.gsfc.nasa.gov/aerosols/services/mapss/*

Product Data PD

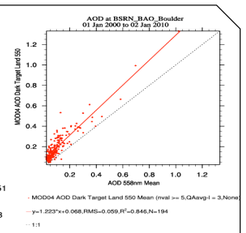


Sensor	Platform	Spatial Resolution (Level 2)	Equator crossing time*	Data period	Features
AERONET	Ground-based	N/A	N/A	Varies with sites	High accuracy
MODIS	Terra Aqua	10x10 km	10:30 am 1:30 pm	Jan'00- Jul'02-	High spatial coverage
MISR	Terra	17.6x17.6 km	10:30 am	Jan'00-	Multiple viewing angles
OMI	Aura	13.7x23.7 km	1:38 pm	Oct'04-	Absorption, SSA
POLDER	ADEOS ADEOS-2 PARASOL	19x19 km	1:30 pm	Oct'96-Jun'97 Apr'03-Oct'03 Mar'05-	Polarization
CALIOP	CALIPSO	5x0 km	1:32 pm	Jun'06-	Vertical profile
VIIRS	Suomi NPP	7.5x7.5 km (MODIS DT)	1:30 pm	'12	New Mission, High spatial and temporal coverage

FEATURES

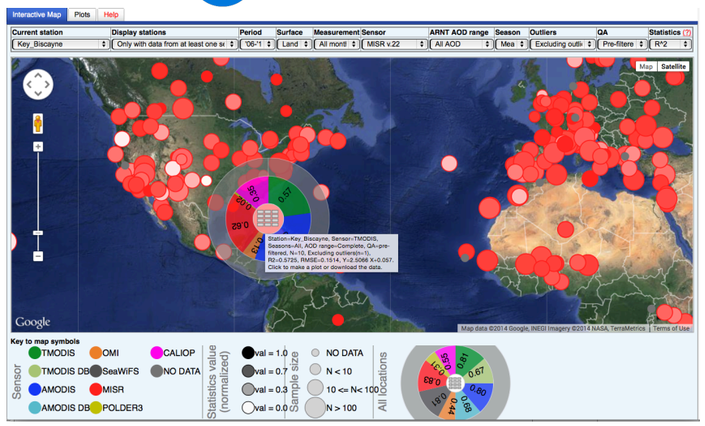


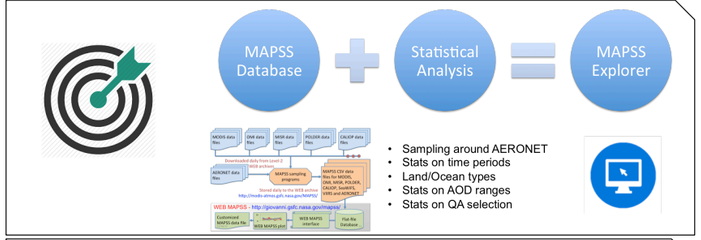
Time Series



Scatter Plot

MAPSS EXPLORER



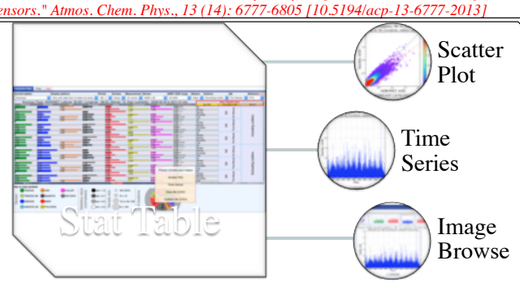


Product Data PD

Sensor	Platform	Spatial Resolution (Level 2)	Version	Statistics period	Features
MODIS	Terra Aqua	10x10 km	C5.1	'96-'13 '96-'06 '06-'10 '10-'13	Land/Ocean Seasons Ranges of AOD Outlier handling QA selection Statistics
MISR	Terra	17.6x17.6 km	V.22		
OMI	Aura	13.7x23.7 km	V3		
POLDER	ADEOS ADEOS-2 PARASOL	19x19 km	V.JK		
CALIOP	CALIPSO	5x0 km	V3		
SeaWiFS	SeaStar	13.5x13.5 km	V3		

Petrenko, M., and C. M. Ichoku. 2013. "Coherent uncertainty analysis of aerosol measurements from multiple satellite sensors." Atmos. Chem. Phys., 13 (14): 6777-6805 [10.5194/acp-13-6777-2013]

FEATURES



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