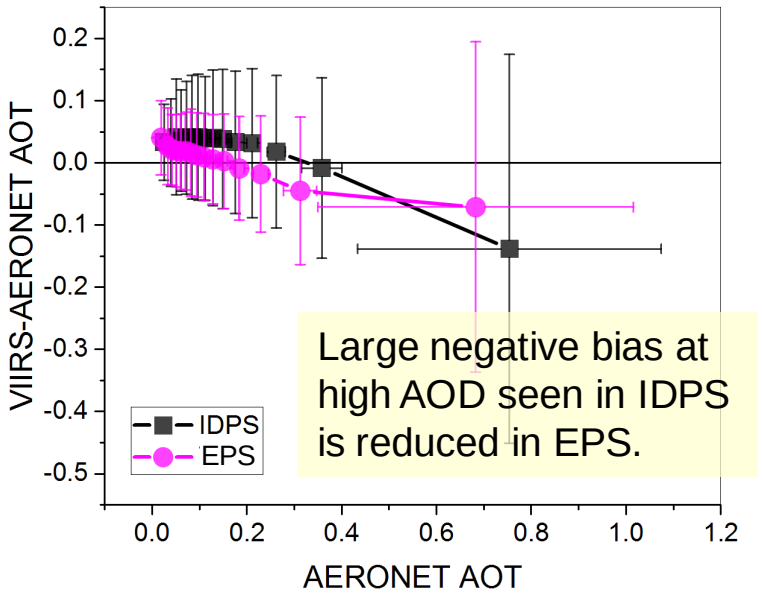
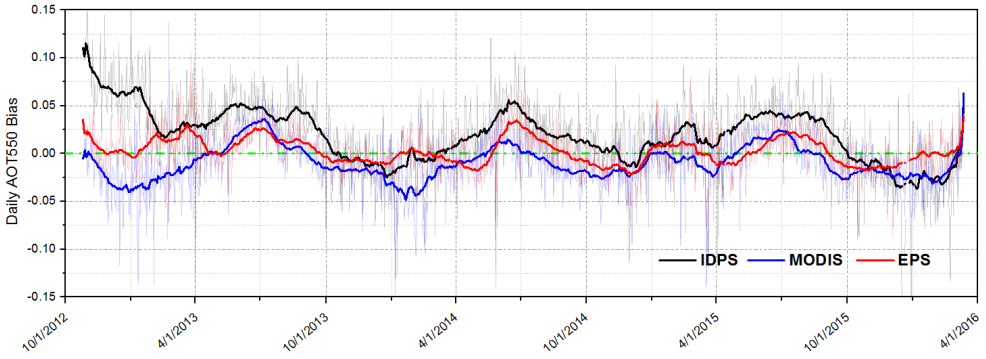
S-NPP AOT Product Overview (1)

AOT - Land	L1RDS	Performance
AOT550 < 0.1		
Accuracy	0.06	0.03
Precision	0.15	0.07
0.1 ≤ AOT550 ≤ 0.8		
Accuracy	0.05	-0.01
Precision	0.25	0.11
AOT550 > 0.8		
Accuracy	0.20	-0.05
Precision	0.45	0.38

AOT - Water	L1RDS	Performance
AOT550 < 0.3		
Accuracy	0.08	0.03
Precision	0.15	0.04
AOT550 >= 0.3		
Accuracy	0.15	0.01
Precision	0.35	0.11



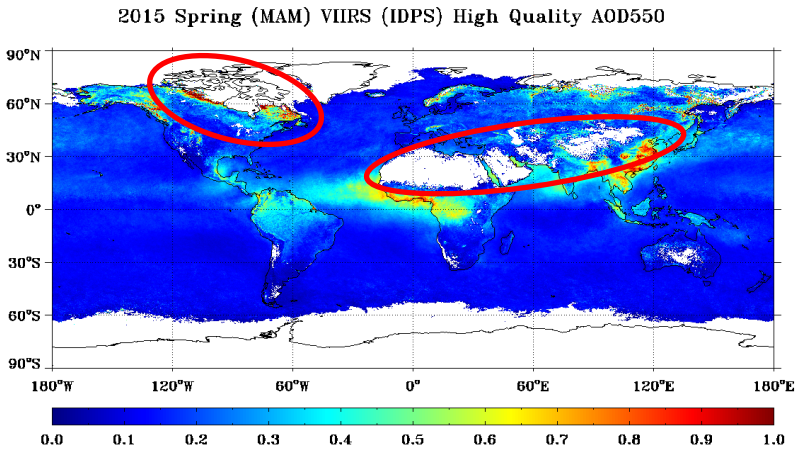


IDPS: Interface Data Processing Segment (current operational system)
EPS: Enterprise Processing System for NOAA Data Exploitation (NDE) operational system

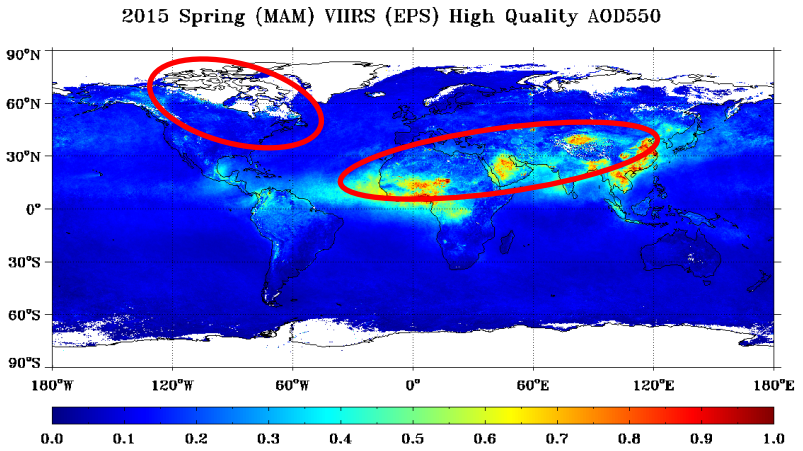
S-NPP AOT Product Overview (2)

- **Enterprise AOT Algorithm Status:**
  - Algorithm is ready
  - Scheduled for operational implementation in Spring 2017
- **Reprocessing:**
  - with EPS algorithm
  - 2015 completed
  - Output Data
    - Pixel-level retrieval and diagnostic outputs in compressed HDF5 format for each granule
    - Total size 7.7T (about 22G per day)
  - Provided data to users at
    - NOAA Earth System Research Laboratory (ESRL)
    - NOAA Joint Center for Satellite Data Assimilation (JCSDA);
    - NOAA National Centers for Environmental Prediction (NCEP) Environmental Modeling Center (EMC)
    - University at Albany, State University of New York
    - Naval Research Laboratory (NRL)

IDPS



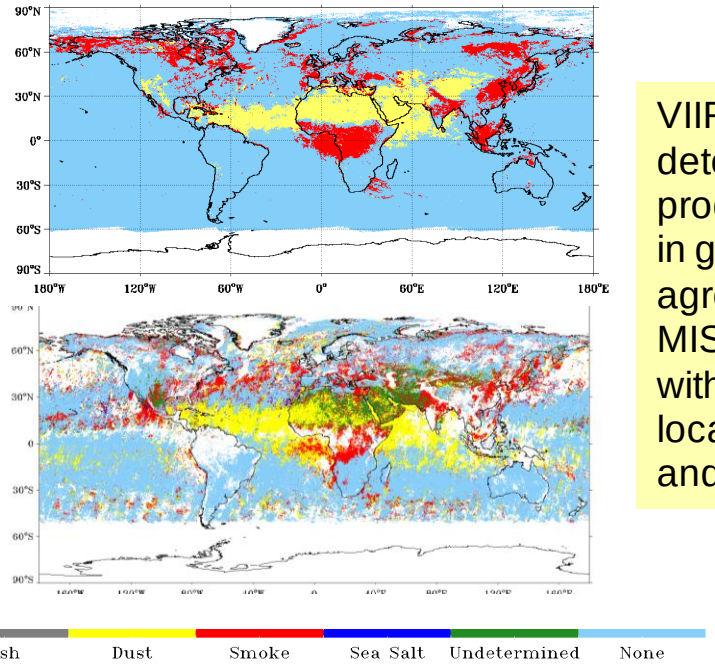
EPS



S-NPP Aerosol Detection Product (ADP) Product Overview

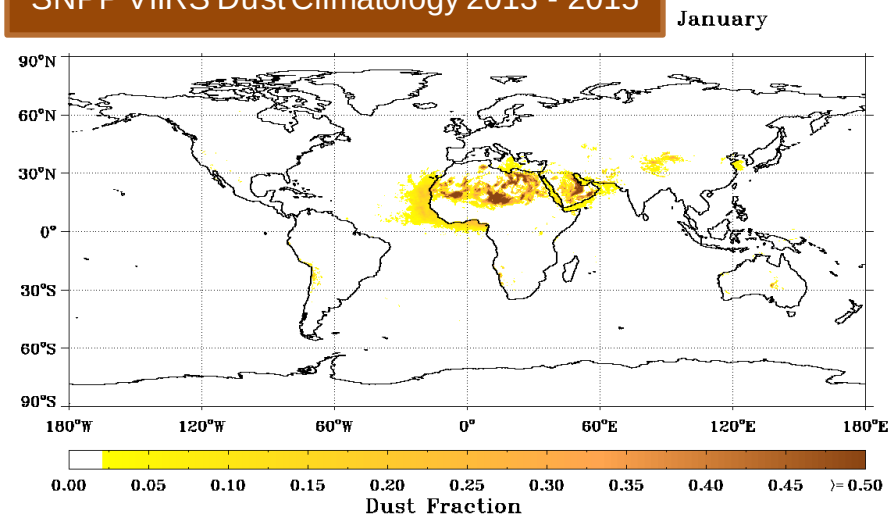
Product	L1RDS	Performance	
		Land	*Water*
Accuracy (%)			
Smoke	70	98	94
Dust	80	84	95
Ash	60		

Both dust and smoke products meet requirements



VIIRS aerosol detection product (top) is in good agreement with MISR (bottom) with respect to location of dust and smoke.

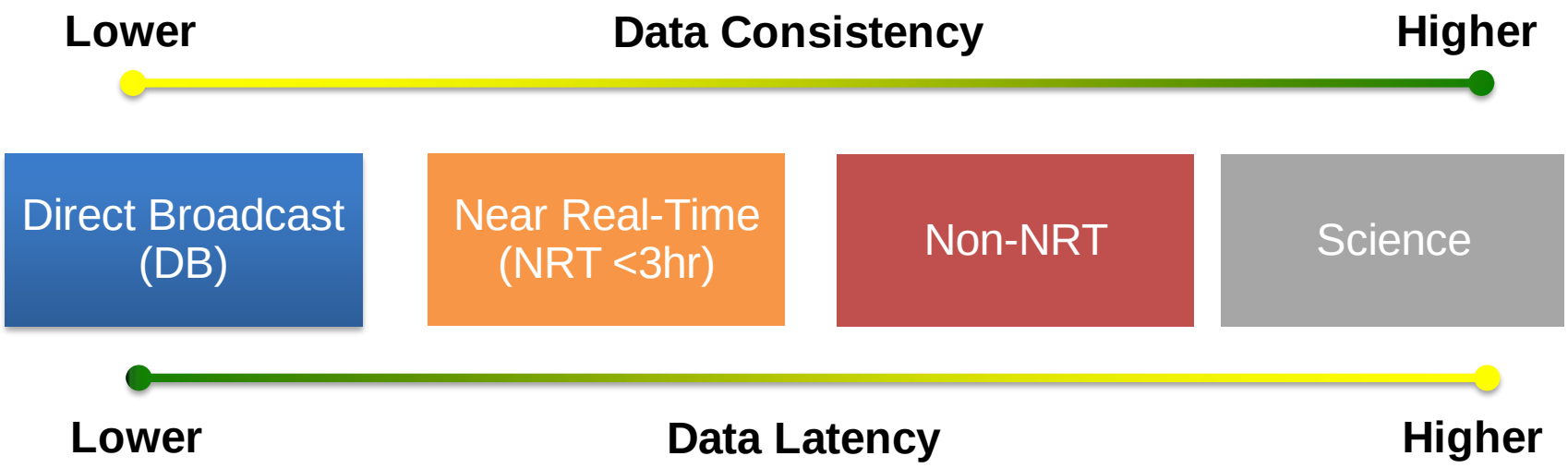
SNPP VIIRS Dust Climatology 2013 - 2015



- **Enterprise ADP Algorithm Status:**
  - Algorithm is ready
  - Scheduled for implementation in NDE in Spring 2017
- **Reprocessing:**
  - with EPS algorithm
  - 2015 completed; other years ongoing

VIIRS Aerosol Product Options

- Trade-off between latency and consistency of data products
- Need to know what general type of product you need (4 categories)
- Many places to find data! (details on following slides)



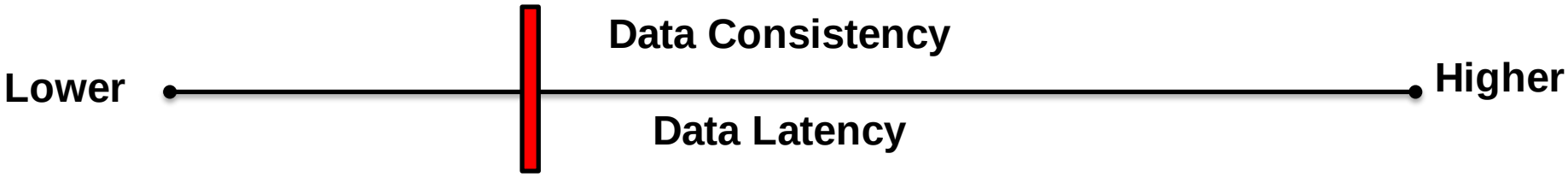
VIIRS Aerosol Products
Sources: DB

Direct Broadcast (DB)

Direct Broadcast (DB) is the real-time transmission of satellite data to the ground. As the Earth is being observed by satellite instruments the data are formatted and transmitted to any users who have compatible ground receiving equipment and are in direct line of sight to the satellite. DB can provide end-users with VIIRS data in less than 1 hour.

For CONUS and Alaska, data can be obtained from:
ftp://ftp.star.nesdis.noaa.gov/pub/smcd/hzhang/VIIRS_NRT/

VIIRS Aerosol Product Sources: NRT



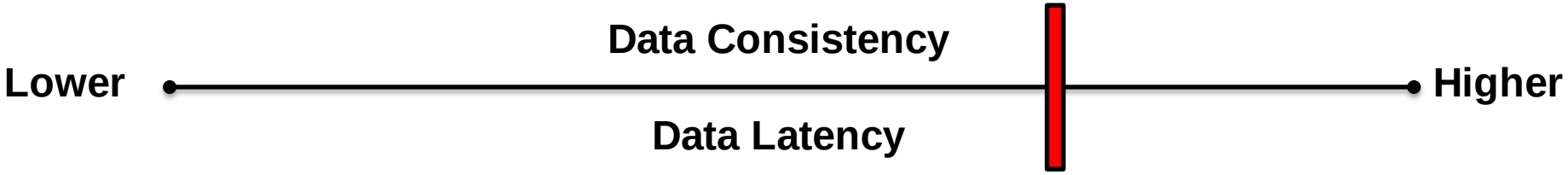
Near Real-Time (NRT <3hr)

Near Real-Time (NRT) data and imagery from VIIRS instrument are available much quicker than routine processing allows. Most data products are available within 3 hours from satellite while imagery are generally available 3-5 hours after observation.

Must fill out the Data Access Request Form to NOAA-NESDIS to get a subscription

http://www.ospo.noaa.gov/Organization/About/access.html

VIIRS Aerosol Products
Sources: Non-NRT

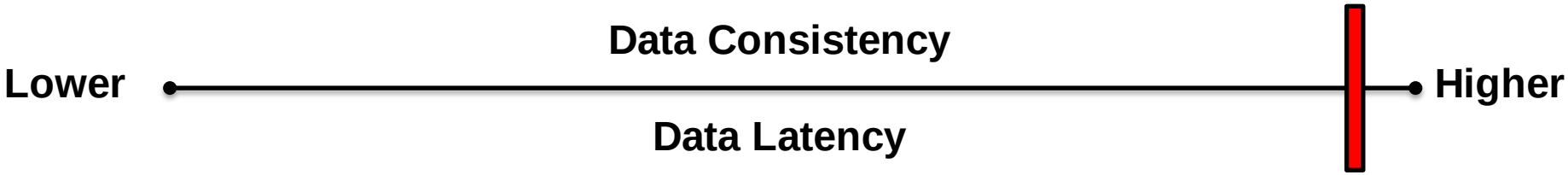


Non-NRT

This is the standard processing stream for SNPP and VIIRS products. Latency is around 6 hours.

http://www.nsof.class.noaa.gov/saa/products/welcome

VIIRS Aerosol Products
Product Sources: Science



Science

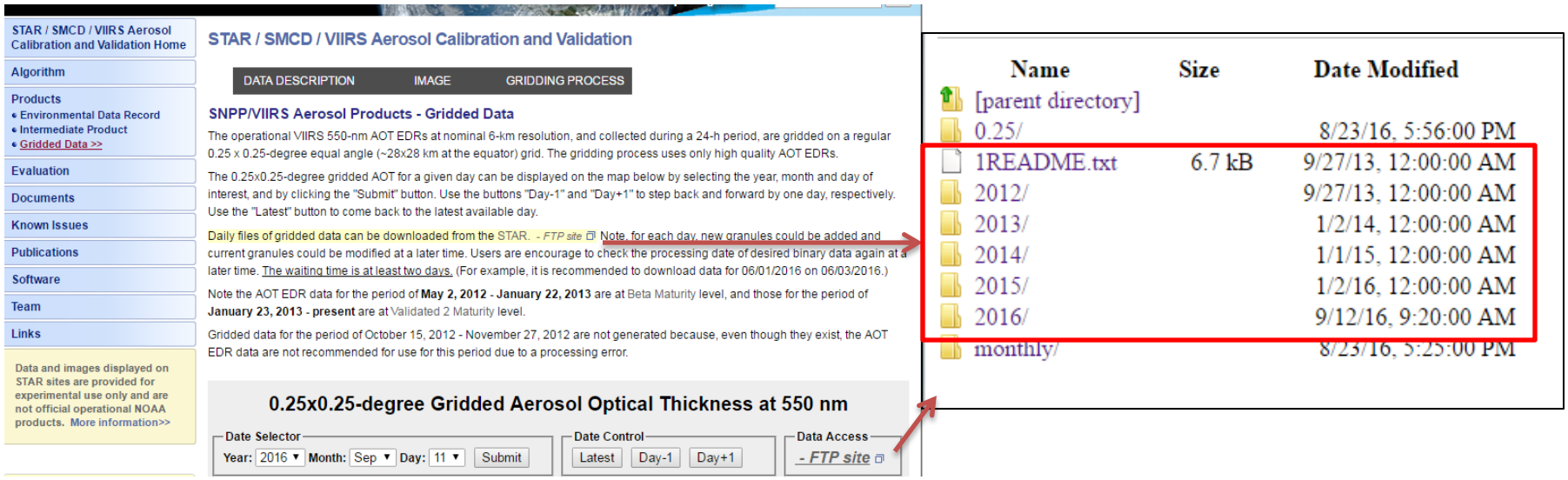
Science quality data have undergone quality checks and been scrutinized before being archived. The data are periodically reprocessed to include algorithm updates. Latency is months to years depending on versions of reprocessing.

Data access by sending a request to Shobha.Kondragunta@noaa.gov or Istvan.Laszlo@noaa.gov

VIIRS Aerosol Product
Source: Gridded Data

- Gridded Data on STAR Aerosol Cal/Val website:

http://www.star.nesdis.noaa.gov/smcd/emb/viirs_aerosol/products_gridded.php



- Daily gridded EPS AOT from 2015 also available via ftp site