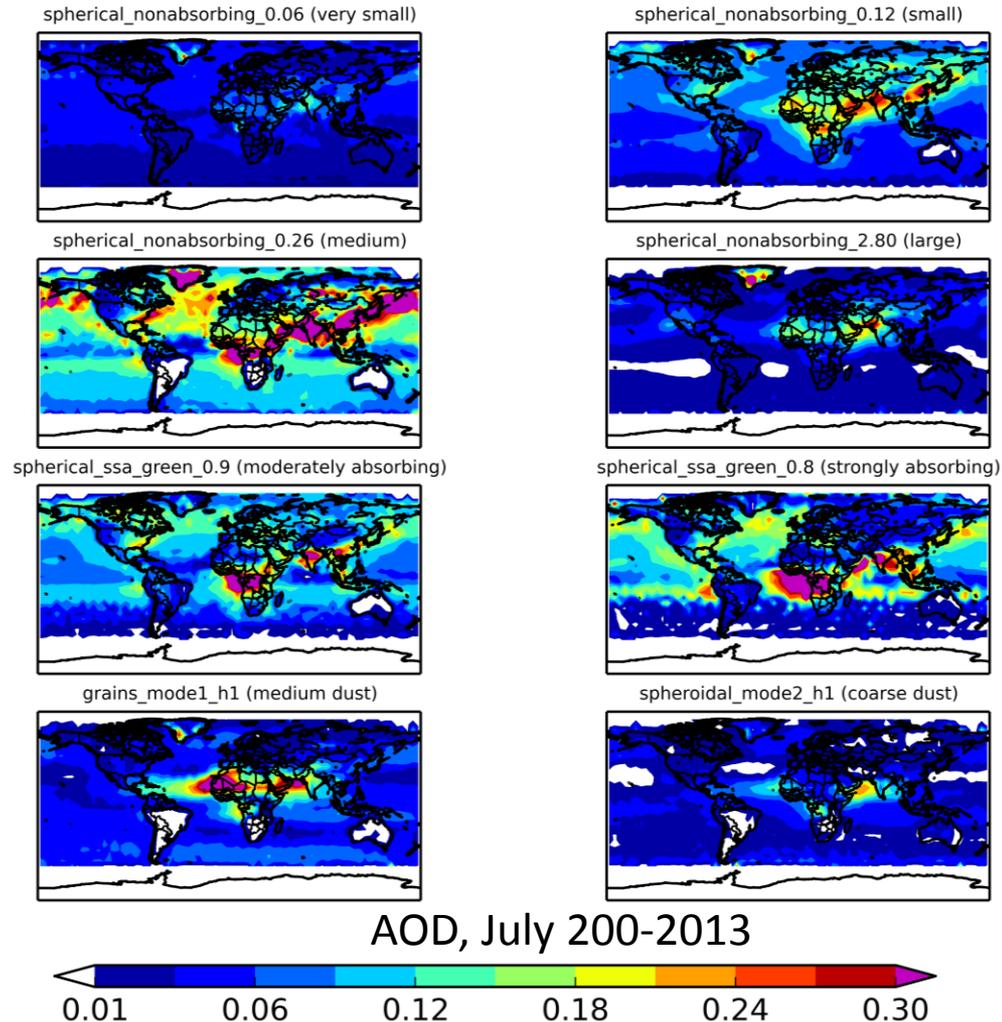


MISR L3 Joint Aerosol (JOINT_AS)

- Global statistical summaries of MISR Level 2 aerosol optical depth by particle type: multivariate histograms.
- Resolution: 5 x 5 degrees & monthly
- Key information: marginal distributions of 8 aerosol types and covariance matrix between different types.

8 types: spherical nonabsorbing (4 sizes), spherical absorbing (moderate and strongly), and nonspherical dust (medium and large)



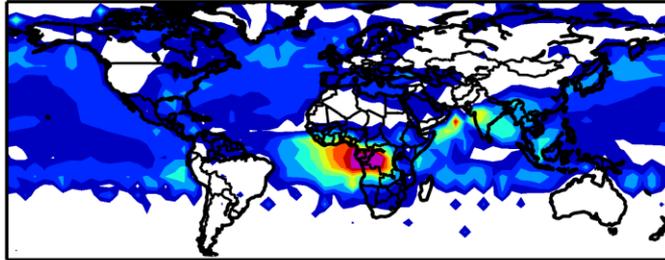
8 types aerosol in MISR -> 4 types in SPRINTARS

MISR	SPRINTARS
strongly absorbing aerosols	carbonaceous aerosols
medium + coarse dust	dust
very small + small + medium non absorbing aerosols	sulfate
Coarse non-absorbing?	Sea-salt ?

- Moments of the AOD in SPRINTARS were calculated at 5°x5° MISR grid points.

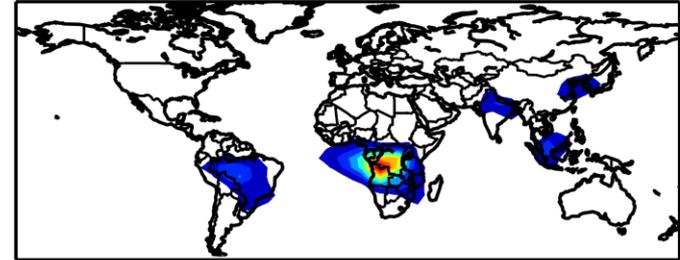
Carbonaceous aerosols

carbonaceous [MISR]



AOD, July 2000-2013

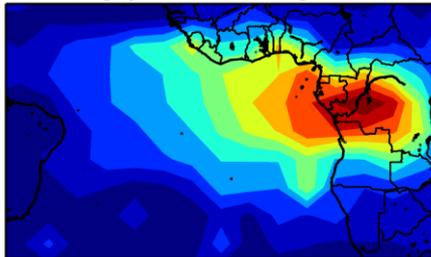
carbonaceous [NICAM]



AOD, July 2008

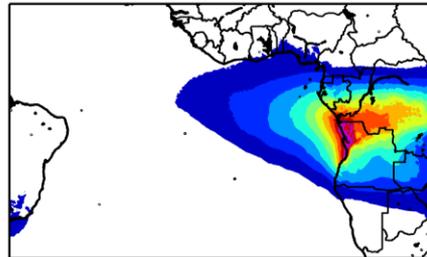


strongly absorbing [MISR]

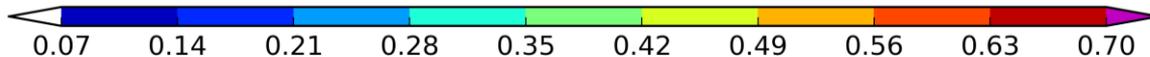


AOD, July 2000-2013

carbonaceous [NICAM]



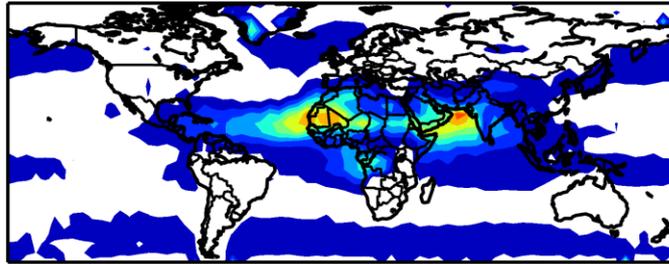
AOD, July 2008



MISR AOD distributions and values of the strongly absorbing aerosols are comparable to SPRINTARS AOD of carbonaceous aerosols

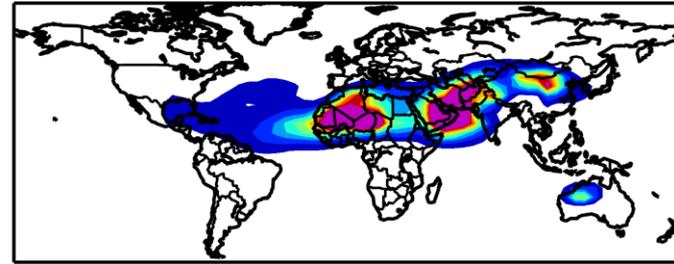
Dust aerosols

dust [MISR]

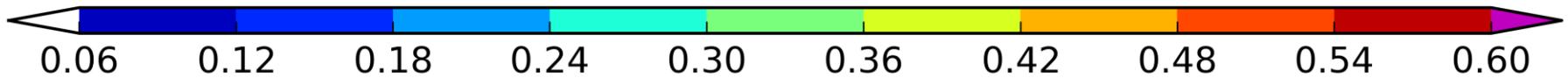


AOD, July 2000-2013

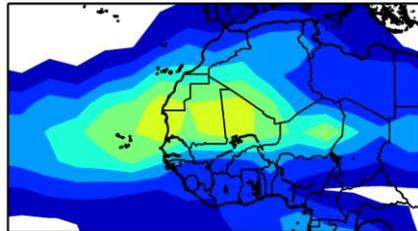
dust [NICAM]



AOD, July 2008

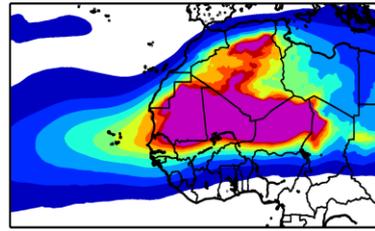


medium + coarse dust [MISR]



AOD, July 2000-2013

dust [NICAM]



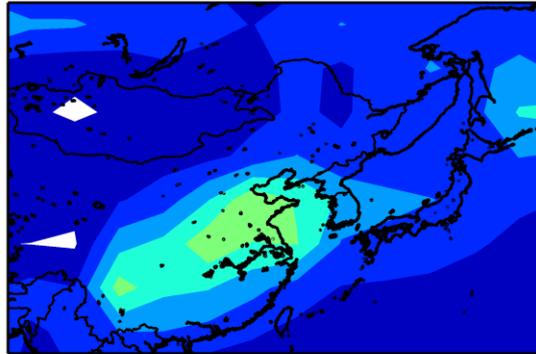
AOD, July 2008



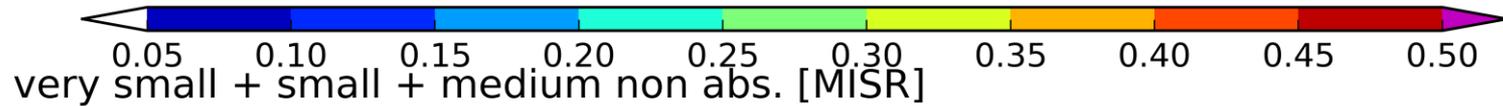
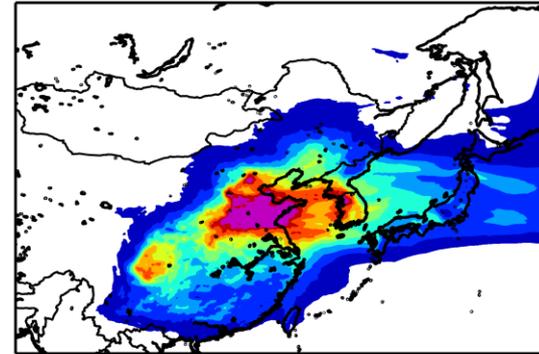
- MISR AOD distributions of dust aerosols are comparable to SPRINTARS dust AOD
- MISR AOD values are significantly lower than those of SPRINTARS

Sulfate aerosols in East Asia

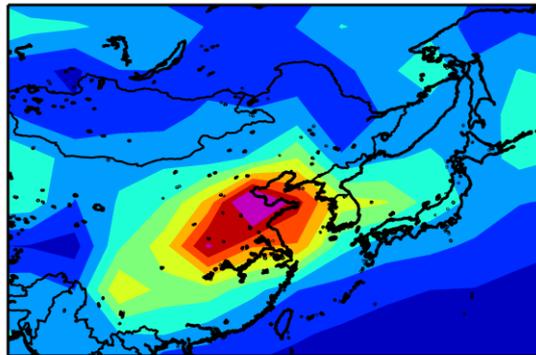
very small + small non abs. [MISR]



sulfate [NICAM]



very small + small + medium non abs. [MISR]

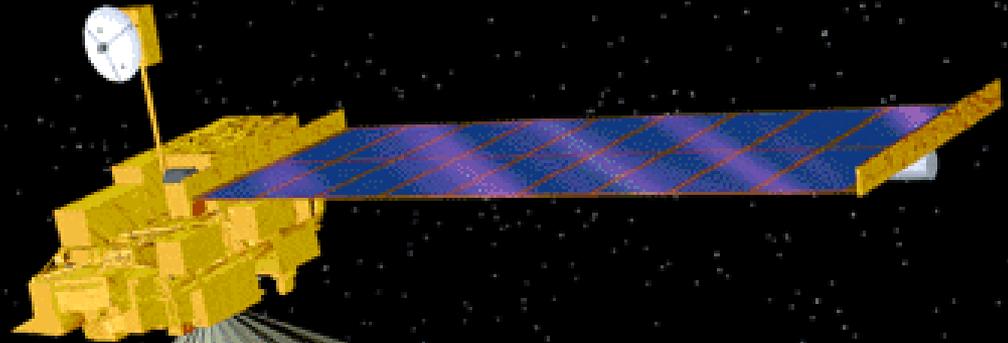




MISR Aerosol Typing

Ralph Kahn

NASA Goddard Space Flight Center



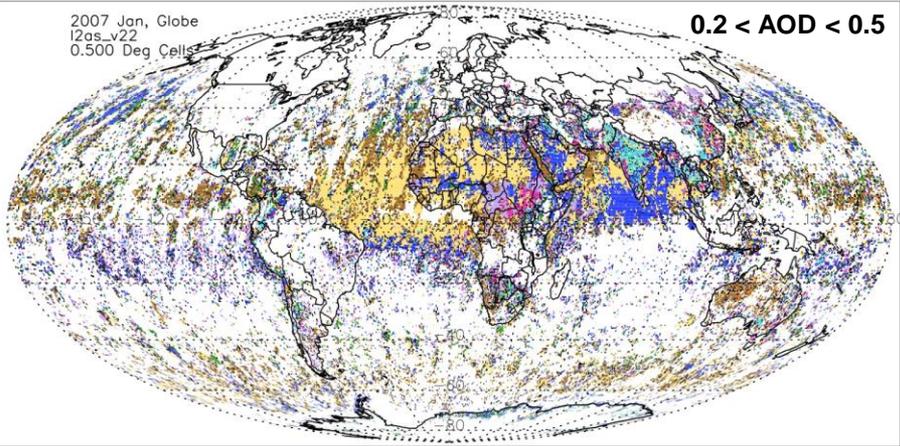
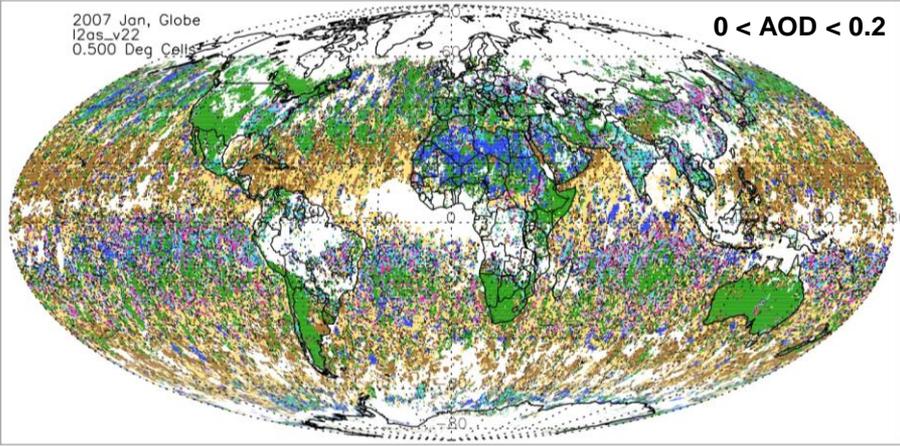
<http://www-misr.jpl.nasa.gov>
<http://eosweb.larc.nasa.gov>

- Nine CCD push-broom cameras
- Nine view angles at Earth surface:
70.5° forward to 70.5° aft
- Four spectral bands at each angle:
446, 558, 672, 866 nm
- *Studies Aerosols, Clouds, & Surface*

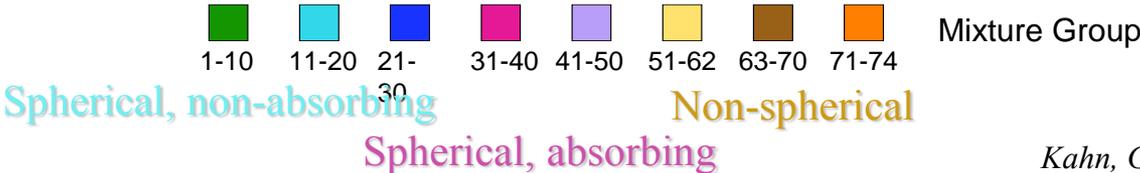
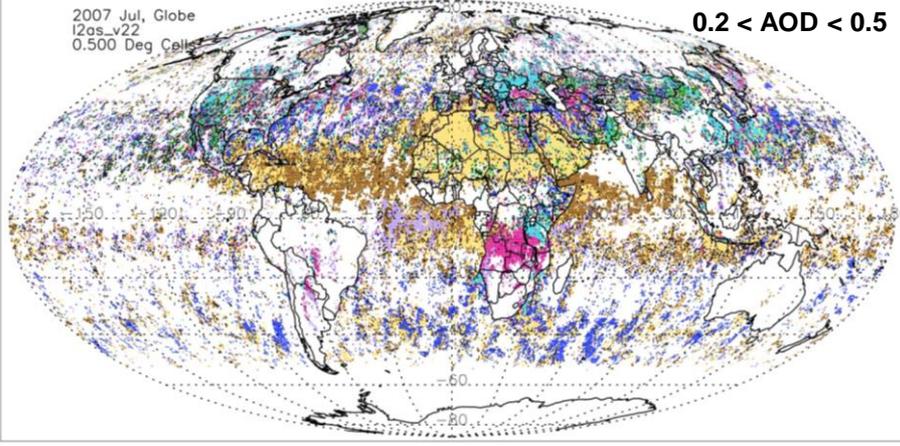
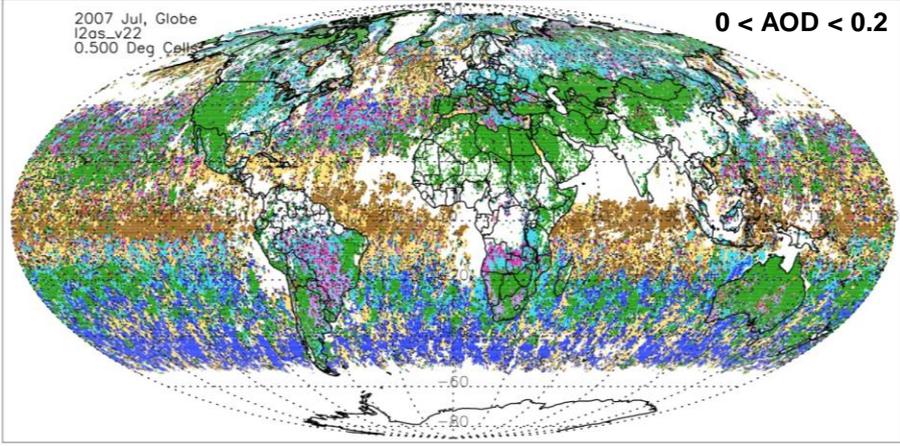


Global Distribution of MISR Most Frequently Retrieved Mixture Group

January 2007



July 2007

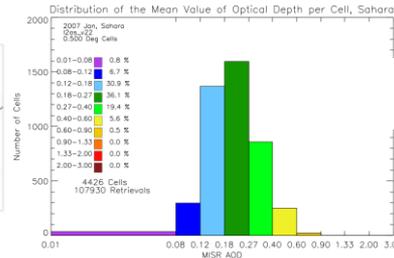
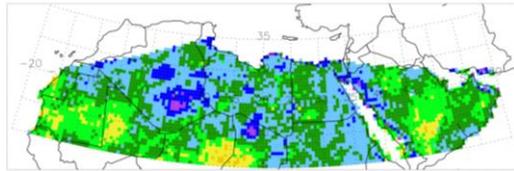


January 2007

Sahara Desert

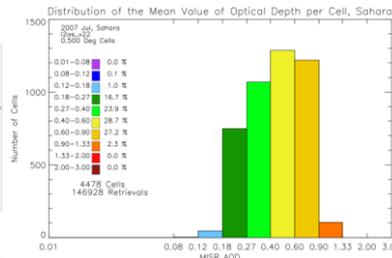
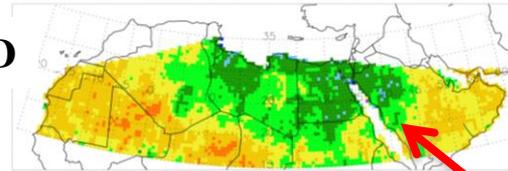
July 2007

Mean Best Estimate Optical Depth, Sahara

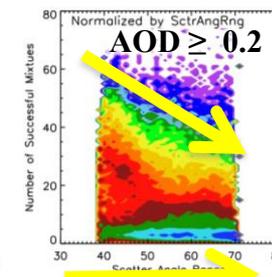
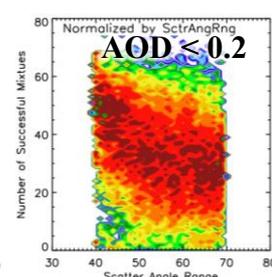
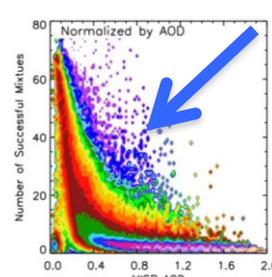
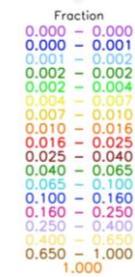
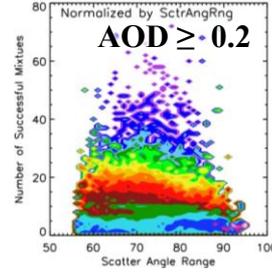
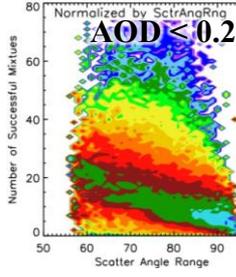
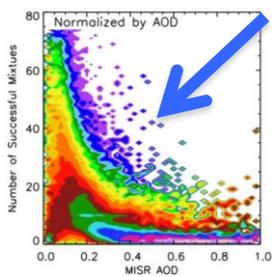


AOD

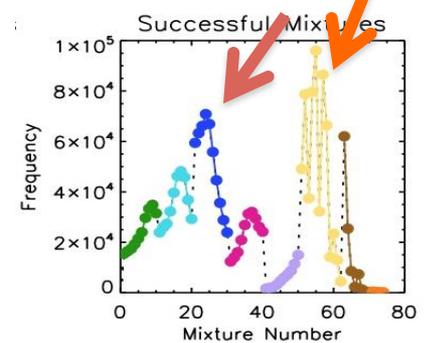
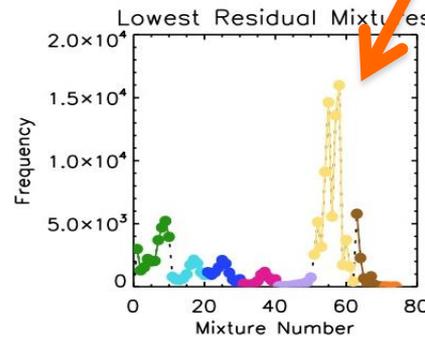
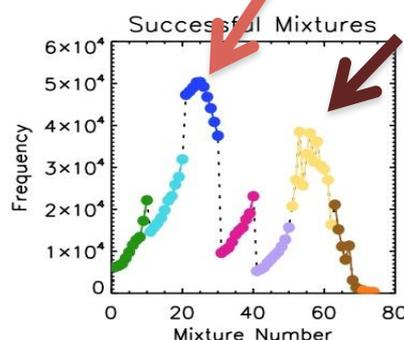
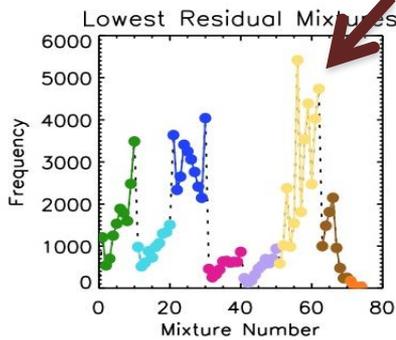
Mean Best Estimate Optical Depth, Sahara



Mean Best Estimate AOD Map & Histogram Distribution



#*SuccMix* vs. Normalized AOD & vs. Normalized Scattering Angle Range



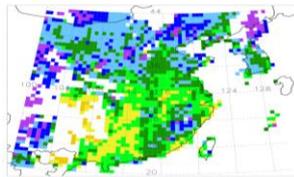
Histograms of Lowest Residual & All Successful Aerosol Type Mixture Groups

January 2007

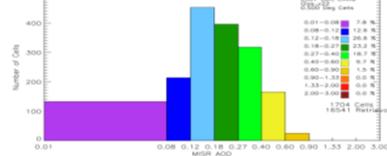
Eastern China (Pollution)

July 2007

Mean Best Estimate Optical Depth, China

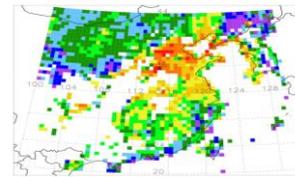


Distribution of the Mean Value of Optical Depth per Cell, China

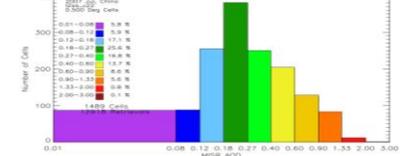


AOD

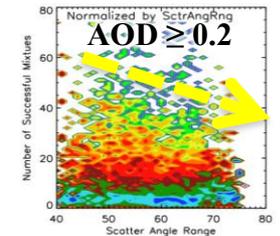
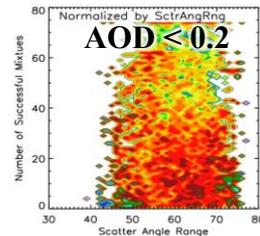
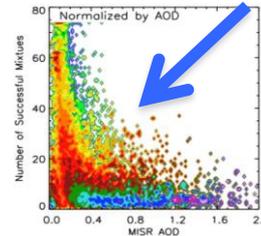
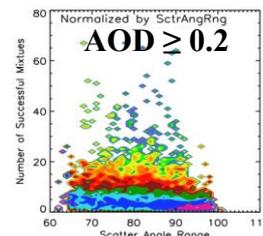
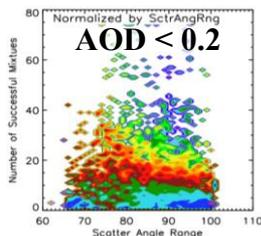
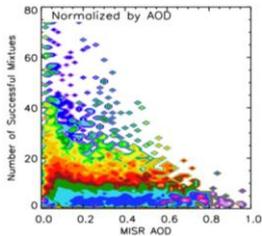
Mean Best Estimate Optical Depth, China



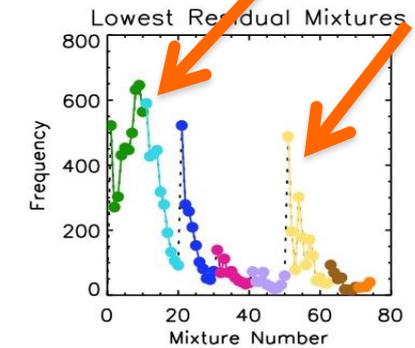
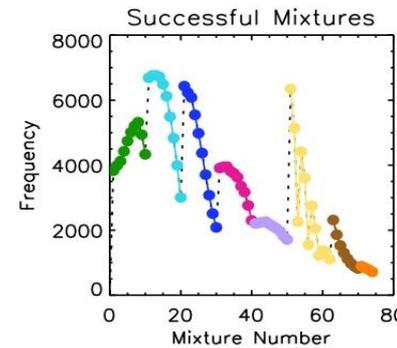
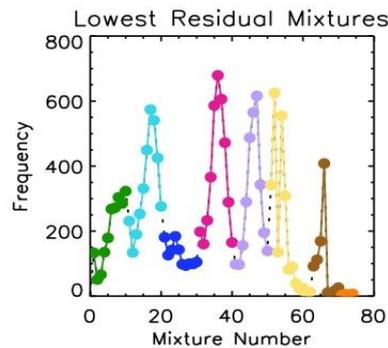
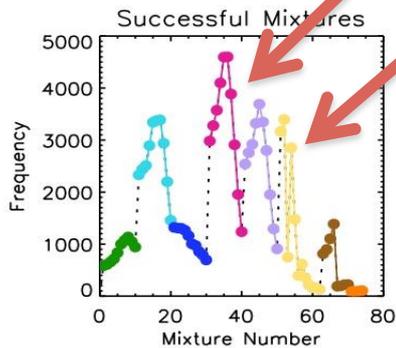
Distribution of the Mean Value of Optical Depth per Cell, China



Mean Best Estimate AOD Map & Histogram Distribution



Number of Successful Mixtures vs. Normalized AOD & vs. Normalized Scattering Angle Range



Histograms of Lowest Residual & All Successful Aerosol Type Mixture Groups

