

## **Intercomparison of MISR Aerosol Retrievals with Sunphotometer and MODIS Results**

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### **Abstract**

The Multi-angle Imaging SpectroRadiometer (MISR) is one of five science instruments aboard the polar-orbiting Terra spacecraft. Among the objectives of the experiment is the global retrieval of amounts and particle properties of tropospheric aerosols. MISR observes the Earth in reflected sunlight, and its typical data collection mode is to observe the Earth globally at nine different view zenith angles, ranging from 70 deg. forward to 70 deg. backward along the spacecraft track, in four spectral bands (446, 558, 672, and 866 nm) with a crosstrack ground spatial resolution of 275 m - 1.1 km. After these 36 channels of imaging data are radiometrically calibrated, georectified, and averaged to a uniform resolution of 1.1 km, they are then automatically analyzed to determine aerosol properties at a resolution of 17.6 km x 17.6 km. MISR retrieval algorithms provide the ability to deal with a broad variety of underlying surface conditions, which is essential to achieving global coverage.

In mid-winter 2003 a major upgrade to the MISR aerosol product was implemented, incorporating improved cloud screening and aerosol mixture discrimination thresholds and algorithms as well as improved instrument radiometric and geometric calibration. A principal tool for evaluating the effect of algorithm upgrades has been the AERONET system, which includes stations situated at ARM sites. Airborne sunphotometry has also been utilized. This paper will show regional and global examples of the MISR optical depth product Intercomparison with sunphotometer data, as well as results from the MODIS instrument, also on Terra, will be shown.