

# GOES-R ABI Aerosol Product Validation and Tools – An Update

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An IDL-based graphical user interfaces (GUI) has been developed for AOD product validation. The major functionalities accessible through this GUI include generating collocated validation data sets; monitoring the instantaneous granule and daily retrieval results; routine validation against AERONET ground measurements and deep-dive validation with MODIS products. A web-based client-side on-line validation system has also been developed. This allows the user to interactively select stations, time period and parameters for analysis. It includes data collocation, AOD time series for global mean and standard deviation, and AOD bias in comparison with ground measurements, and dependency of error on input parameters.

The validation dataset over ocean has been expanded to include the Maritime AERONET Network (MAN) from 2004 to current. The comparison with MAN indicates that ABI-retrieved AOD over ocean is comparable with MODIS-retrieved AOD, and both well agree with MAN AOD. It also shows improvement relative to previous comparisons with coast and island AERONET sites.

ABI AOD retrievals from MODIS Aqua data in August 2006 have been analyzed. These retrievals used the ABI cloud mask as input instead of the MODIS cloud mask. The AOD retrieval with the ABI cloud mask has improved slightly. However, overall the AOD is overestimated in comparison with AERONET ground measurements. One Aqua granule MYD20062181840 was used for a detailed analysis. It has been found that such AOD overestimation results from the overestimation of reflectance used in the AOD retrieval, suggesting that the ABI cloud mask may not be sufficient for ABI aerosol retrieval. Therefore, internal cloud checks have been proposed, which significantly improves the ABI AOD retrieval compared to AERONET and MODIS for the selected case.