



Aerosol properties from OMI using cloud and aerosol information from MODIS

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Aerosol retrieval from OMI measurements in the UV-Vis is difficult since there are more unknowns than degrees of freedom of signal. In particular cloud contamination is an important source of error in this context. This problem is addressed by performing OMI aerosol retrievals based on a modified multi-wavelength algorithm (OMAERO product) where measurements of OMI are evaluated using auxiliary information on MODIS cloud data, which are based on measurements in the Vis-SWIR with a small pixels size. Moreover, we introduce a synergistic retrieval where measurements of OMI are evaluated using auxiliary information on MODIS aerosols data. OMI measurements are a valuable source for information on aerosol absorption. This is due to the fact that aerosol absorption is enhanced in the UV by multiple scattering. Therefore, OMI aerosol measurements are complementary to MODIS aerosol products that do not comprise measurements in the UV. In the synergistic retrieval scheme the aerosol optical thickness is constrained with MODIS data while the remaining aerosol parameters are determined based on OMI measurements. The required MODIS Level-2 data are based on a mature retrieval scheme and are readily available. A potential source of error of such a sequential approach is a possible inconsistency of aerosol models employed in the individual retrieval schemes. The retrieval schemes are discussed and first results are presented.