



Aerosol Properties from OMI: Validating Height Information using Space borne Lidar Data

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The Ozone Monitoring Instrument (OMI) is an imaging UV-VIS solar backscatter spectrometer. OMI is a Dutch-Finnish instrument aboard the NASA satellite EOS-Aura which has been launched in July 2004. The OMI O₂-O₂ cloud product contains the effective scattering height of the atmosphere derived from the depth of the O₂-O₂ absorption band. For a cloud-free atmosphere the retrieved value is a measure for the aerosol layer height. In this case study the retrieved values for the aerosol layer height are validated. A case with a very strong Saharan dust aerosol transport event over the Atlantic Ocean is chosen. The horizontal distribution of the aerosol plume and clouds is traced in MODIS (Moderate Resolution Imaging Spectroradiometer) images over several days, while the vertical distribution is characterized by the satellite based LIDAR instrument GLAS (Geoscience Laser Altimeter System). For the measurement time of the data used in this comparison CALIPSO (Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations) data were not yet available; CALIPSO will be used in future validation studies. A trajectory analysis is performed in order to achieve an optimal match of the air masses for the comparison of GLAS data and OMI data.