



Monthly averaged aerosol optical depth from SCIAMACHY nadir radiances

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Aerosol retrieval from SCIAMACHY data processing at ISAC-CNR has been carried-out to retrieve Aerosol Optical Depth (AOD) at 500 nm wavelength together with a parameter (class) which defines a set of chemico-physical properties pertaining to suspended particles. SCIAMACHY level 1B data from nadir measurements both over ocean and land are used as input for this processor. SCIAMACHY, onboard ENVISAT, is a remote sensing spectrometer measuring sunlight scattered, transmitted and reflected by the Earth's surface-atmosphere system. Its wavelength range spans from about 240 nm to about 2440 nm, with a spectral resolution varying from 0.24 nm in the UV to 1.56 nm in the NIR.

In this aerosol retrieval algorithm the working wavelengths are selected in the UV-VIS range characterized by negligible gases absorption, i.e. lower than 1%. Due to underestimation in SCIAMACHY spectra, at these wavelengths the measured reflectances relevant to ground pixels showing values of cloud coverage fraction lower than 0.05 are corrected and fitted with modelled reflectances. The couple formed by AOD and class which minimizes the merit function represent the retrieved aerosols parameters for the spectrum being analysed.

Comparison of the retrieved aerosol properties with ground based data collected in different AERONET sites will be shown. Furthermore, monthly global average of AOD pertaining to several months in 2004 will be set against MODIS AOD. This comparison will enable us to figure out the efficacy of this retrieval approach in detecting aerosol global spatial distribution and loadings.