Geophysical Research Abstracts
Vol. 14, EGU2012-7845, 2012
EGU General Assembly 2012

Synergetic retrieval of aerosol properties from MetOp

D. Martynenko, T. Holzer-Popp, L. Klüser, and M. Schroedter-Homscheidt
German Aerospace Center, DFD-KA, Wessling, Germany (dmytro.martynenko@dlr.de)

At the Earth Observation Center (EOC) of the German Aerospace Center (DLR) an upgrade of the synergetic aerosol retrieval method SYNAER which exploits GOME-2 and AVHRR data was made. SYNAER combines the use of an automatic dark field technique for AVHRR visible reflectances with a least square fit of simulated reflectance spectra to GOME-2 measurements. This combination of two instruments allows retrieving aerosol optical depth at 550 nm and aerosol speciation from a choice of 40 pre-defined aerosol types.
This method was firstly developed with the sensor pairs ATSR-2 & GOME on board ERS-2 and AATSR & SCIAMACHY on board ENVISAT. However, due to instrumental limitations the coverage of SYNAER/ERS-2 and SYNAER/ENVISAT is limited. Therefore, SYNAER was transferred to similar sensors AVHRR and GOME-2 onboard MetOp. While transferring to the new sensor pair a thorough analysis of the necessary parameterization of surface reflectance was made since this is one of the largest sources of uncertainty in nadir aerosol retrieval. Here the significantly broader channels of AVHRR versus AATSR need to be accounted for. With the adapted method one of the first goals is the production of and thorough error characterization of several months of tropospheric aerosol data The work shows the analysis behind the sensor adaptation and exemplary results obtained with SYNAER applied to METOP sensors.