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Results of synergetic aerosol retrieval from ENVISAT

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A synergetic aerosol retrieval exploiting a radiometer-spectrometer sensor combination onboard ENVISAT has been developed and evaluated (Holzer-Popp, et al., ACP, 2008). This retrieval algorithm SYNAER exploits the complementary spectral and geometric resolution of the two instruments, which enables retrieval of aerosol optical depth and composition in major optical components (water-soluble, mineral dust, soot, sea salt). Based on this estimation of aerosol type and consecutively its size distribution characteristics and with auxiliary model information on the vertical structure of the aerosol profile also retrieval of particulate matter mass concentrations (PM10, PM2.5, PM1.0, and their composition) can be retrieved. SYNAER is currently being transferred to a similar sensor combination onboard the METOP-1 satellite in order to improve the temporal-spatial coverage.

This presentation will show examples of SYNAER results from 2003 – 2007. These include monthly and seasonal maps, regional time series and statistical inter-comparisons to AERONET and other satellite datasets (e.g. MODIS, MSG). In particular datasets of the major aerosol components will be assessed.