Satellite Remote Sensing of the Atmospheric Aerosols using AATSR data

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The remote sensing of aerosol properties using satellite instruments has been introduced at the Finnish Meteorological Institute and the University of Helsinki since 2007. One of the main objectives of the remote sensing research has been the further development and improvement of retrieval algorithms for the retrieval of aerosol properties over land using the dual view. Over ocean each of the forward and nadir views provided by the Advanced Along Track Scanning Radiometer (AATSR), flying of ENVISAT, is used separately. The primary parameter retrieved is the aerosol optical depth (AOD) at three/four wavelengths. Other parameters can be derived during the retrieval process. Global near-real-time AOD is available. Scientific remote sensing research includes studies of local aerosol conditions in e.g. China, India, South-Africa, boreal forest, Russia, and Finland. Different types of aerosol are under study: wild fire smoke, desert dust, anthropogenic aerosols, and volcanic ash. In this work some of the research topics are described and presented.