Aerosol retrieval over land using the AATSR dual view algorithm

Gerrit de Leeuw (1,2,3), Pekka Komonen (1), Larisa Sogacheva (1), Anu-Maia Sundström (2), and Edith Rodriguez (1)

(1) Finnish Meterological Institute, Climate Change Unit, Helsinki, Finland (gerrit.leeuw@fmi.fi), (2) University of Helsinki, Dep Physics, Helsinki, Finland, (3) TNO B&O, Utrecht, The Netherlands

The Advanced Along Track Scanning Radiometer (AATSR) flying on ENVISAT has been providing information on aerosol properties over widely different areas across the globe, with different land surface properties and different aerosol composition and concentrations. To this end, the single and dual view algorithms have been developed for application over ocean and land, respectively, and the evaluation of the aerosol properties retrieved using these algorithms, by comparison with AERONET data and results from other satellites, in particular MODIS, is being used to continuously improve them. Applications include the retrieval of forest fires smoke plumes over different areas in the world, to very clean areas in Finland, moderately polluted areas in Europe and highly polluted areas over China. The algorithms use look-up tables (LUTs) for different aerosol types and the algorithm has been set up to choose the most likely mixing ratio of two prescribed aerosol types (based on a priori information) using the information on the spectral dependence of the radiations measured at three or four wavelengths, in addition to aerosol optical density and Ångström parameter. Selected results will be presented.