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MACRON – Maritime Aerosol, Clouds and Radiation Observation in Norway

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MACRON (Maritime Aerosol, Clouds and Radiation Observation in Norway) campaign was performed in July/August 2007 in ALOMAR observatory on Andoya island (69N, 16E). Its goal was to collect a multi-instrumental data characterizing properties of marine aerosol north to the Polar Circle.

A rich set of instruments allowing for passive and active teledetection of optical properties of atmospheric aerosol was involved, additional in-situ characterization of marine aerosol was obtained as well. The database from the project contained data collected by means of: - two multiwavelngth lidars (1064nm, 532nm and 355nm), one allowing for measurements at low inclination angles of the beam; - two lidar ceilometers (working at 1064nm wavelength) for continuous monitoring of aerosol profiles in the Atmospheric Boundary Layer (ABL); - two automatic sun-tracking multispectral sun photometers: prototype MSSP measurning at 256 wavelenghts and CIMEL; - hand held MICROTOPS sunphotometers; - Brewer spectrophotometer and Ground-based Ultraviolet Radiometer - GUV; - pyrheliometer, pyrgeometer, shadow-band; - PMS particle counter;

Remote sensing instruments were placed in the following locations: in ALOMAR observatory at 380m above sea level, in the Andoya Rocket Range in the foothills of ALOMAR at the sea level, in Bleik 4 km apart from ALOMAR at the sea level. PMS

particle counter was on the "Oceania" research vessel anchored 3km from the shore.

In this study we present preliminary results from MACRON campaign. Of particular interest is an attempt to characterize vertical profiles of marine aerosol mode radii and concentration in the ABL retrieved from combined measurements with PMS and multiwavelength lidar.