

Studies of Aerosol Optical Depth with the Use of Microtops II Sun Photometers and MODIS Detectors in Coastal Areas of the Baltic Sea

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A b s t r a c t

In this paper we describe the results of a research campaign dedicated to the studies of aerosol optical properties in different regions of both the open Baltic Sea and its coastal areas. During the campaign we carried out simultaneous measurements of aerosol optical depth at 4 stations with the use of the hand-held Microtops II sun photometers. The studies were complemented with aerosol data provided by the MODIS. In order to obtain the full picture of aerosol situation over the study area, we added to our analyses the air mass back-trajectories at various altitudes as well as wind fields. Such complex information facilitated proper conclusions regarding aerosol optical depth and Ångström exponent for the four locations and discussion of the changes of aerosol properties with distance and with changes of meteorological factors. We also show that the Microtops II sun photometers are reliable instruments for field campaigns. They are easy to operate and provide good quality results.

Key words: aerosol optical depth, Microtops II, Baltic Sea, MODIS.