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MARINE AEROSOL FLUXES DETERMINED BY SIMULTANEOUS MEASUREMENTS OF EDDY COVARIANCE AND GRADIENT METHOD

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Abstract

In this paper the results of the aerosol flux measurements in near water boundary layer are presented. Measurements were conducted using two micrometeorological methods in the southern Baltic Sea region. The preliminary results of comparisons of two methods are discussed. The eddy covariance (EC) method is shown as a method for the calibration of the gradient method (GM). The reason for proceeding with such calibration is to show that the GM, which is an indirect measuring method, is comparable with a direct method such as the EC. In the EC measurements the condensation particle counter (CPC, measuring range 0.05 - 3 μm with 1 Hz counting speed) and the Research Anemometer (50 Hz measurement speed) were used. For the GM, a Classical Scattering Aerosol Spectrometer was applied (measuring range from 0.5 to 47 μm diameter, within 36 measuring channels). Data from scientific cruises of the r/v Oceania in the southern Baltic Sea between 2008 and 2011 were analyzed.

Key words: air-sea interaction, marine aerosol flux, marine boundary layer, sea spray aerosol

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