

Wednesday, October 10

Poster Session 3

16:00–18:00

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Poster 258

A PRACTICAL METHOD FOR ESTIMATING THE LIGHT BACKSCATTERING COEFFICIENT FROM THE REMOTE-SENSING REFLECTANCE IN THE CONDITIONS OF THE BALTIC SEA AND EXAMPLES OF ITS POSSIBLE APPLICATION

Based on empirical data collected in the region of southern and central Baltic Sea a simple and practical method for estimating the light backscattering coefficient in the surface layer of seawater from the remote-sensing reflectance spectra has been developed. This method relies on the following two observations: 1) the existence of a relatively strong statistical correlation between the two mentioned optical quantities in the range of red light wavelengths (e.g. at 620 or 650 nm), and 2) the fact that in the conditions of the Baltic Sea the spectral shape of the light backscattering coefficient of suspended particles varies only to a small extent and can be approximated by an averaged shape. In the case of backscattering coefficient of seawater, whose measured values changed in the examined waters by more than one order of magnitude, the accuracy of its estimation by means of the proposed simple method can be characterized by a standard error factor of 1.28 or less (which corresponds to the relative error of estimation ranging from -22% to +28%). In addition, examples of the possible application are provided. The developed method can be used as one of the stages of simple algorithms for estimating the spectra of light absorption coefficient in seawater, without a need for any additional a priori assumptions regarding the spectral shape of absorption by dissolved and suspended seawater constituents.

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