**Variability of the seawater bio-optical properties in the near-surface layer**

**on the transition from the Baltic to the White Sea from data of satellite**

**and shipboard measurements**

*Dmitry Glukhovets*

 A goal of this work is the comparative analysis of results of satellite (MODIS-Aqua) and shipboard measurements of seawater bio-optical properties in the near-surface layer, carried out during the 127-th scientific cruise of R/V "Professor Shtokman" from Kaliningrad to Arkhangelsk, 26 July – 5 August 2014. The shipboard data include spectra of seawater fluorescence induced at two excitation wavelengths (401 and 532 nm), the seawater attenuation coefficient, concentrations of chlorophyll and different phytoplankton species measured on 40 seawater samples from 0 and 4 m depth.

 A good agreement between the changes in the fluorescence spectra and the spectral remote sensing reflectance Rrs(*λ*) from the Baltic to the Barents Seas was observed; the main factors determining changes in the Rrs(*λ*), such as high concentration of the color dissolved organic matter (CDOM) in the Baltic Sea and coccolithophore blooms in the Barents Sea were revealed. The connection between the fluorescence spectra, chlorophyll concentration and phytoplankton is analyzed. The regional algorithm for assessment of the coccolithophore concentration in the Barents Sea from satellite data is validated.

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Dmitry Glukhovets

Moscow Institute of Physics and Technology (State University)

Institutskiy per., 9, Dolgoprudnyy, Moscow Oblast, 141700, Russia

Е-mail: glukhovets@ocean.ru