**The problems of estimation of bioproductivity in the Russian Eastern Arctic by the remote sensing methods**

Salyuk Pavel1, Stepochkin Igor2, Sokolova Ekaterina3

In the work the natural and instrumental factors are considered which lead to the errors of remote sensing measurements of basic parameters characterized bioproductivity in seawater of Russian eastern Arctic. Comparative analysis of chlorophyll-a concentrations between obtained using flow fluorometric measurements received on a board vessel, and chlorophyll-a concentrations calculated by MODIS-Aqua and VIIRS satellite data of ocean color was conducted. The data at board of ship were adjusted to standard spectrophotometric measurements and vertical depth distribution of phytoplankton. Research by array data were carried out to Bering and Chukchi Seas, De Long Strait and it were obtained in August 2013. In the analyzed waters of the Bering Sea and the Eastern Arctic radiometer VIIRS gave more accurate measurements of chlorophyll-a concentration as compared to using MODIS satellite data with processing procedures № 2013.1. Both VIIRS and MODIS-Aqua overestimated viewed from satellite chl-a concentrations in the waters of the Eastern Arctic in august of 2013. It is associated with a high relative content of colored organic matter in the upper layers of the sea, which misinterpreted by the global bio-optical algorithms as an additional contribution of phytoplankton. The satellite data in De Long Strait did not give a complete picture of the total biomass of phytoplankton, integrated in depth, since the bulk of phytoplankton with chl-a concentration 10-20 mg/m3 are located at the depths of 3-5% of surface light level and in the upper layers only chl-a concentrations in 0.1-0.3 mg/m3 diapason are observed.

1. V.I.Il`ichev Pacific Oceanological Institute, 43, Baltiyskaya Street, Vladivostok, 690041, Russia, pavel.salyuk@gmail.com
2. Admiral Nevelskoy Maritime State University, 50a, Verkhneportovaya St., Vladivostok, 690059, fizzeg@gmail.com
3. Admiral Nevelskoy Maritime State University, 50a, Verkhneportovaya St., Vladivostok, 690059, mastapes@mail.ru