

OCEAN OPTICS XXIV

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<https://oceanopticsconference.org>

Wednesday, October 10

Poster Session 3

16:00–18:00

Poster 266

PRIMARY PRODUCTION IN THE ARCTIC WATERS

The plankton algal primary production in the world ocean was a subject of interest since more than 50 years. Knowledge of the phenomenon is crucial for understanding of marine ecosystems functioning and explaining changes of ocean productivity, i.e. the availability of marine plankton, which is the base of the trophic pyramid and the beginning of the food web necessary for the growing of organisms from higher level and fish important from economic point of view. The ^{14}C technique involves addition of $^{14}\text{CO}_2$ in to the water sample, where during photosynthesis the algae incorporate the tracer into organic matter. If the total content of CO_2 in the experimental water is known, and if the known amount of $^{14}\text{CO}_2$ is added, the rate of primary production can be calculated. The frequency of pelagic primary production measurements are relatively low because of methodology (usually one incubation per day in midday) and high costs both vessel as well as buying ability of isotope ^{14}C and its price. Despite this the in situ measurement of primary productions in different region were conducted and collected by research time from Marine Optics Department of Institute of Oceanology of Polish Academy of Sciences (IO PAS) since 1993. The largest number of measurements was made in the Baltic Sea region, a few in situ expositions were conducted in the Arctic, 1997, 2002 and 2003. Results of those experiments will be presented at the poster.

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