

Spektralne właściwości absorpcji i fluorescencji chromoforowej rozpuszczonej materii organicznej w wodach Mórz Nordyckich.

Spectral absorption and fluorescence properties of Chromophoric Dissolved Organic Matter (CDOM) in the Nordic Seas.

Anna Raczkowska

Observations of Colored Dissolved Organic Matter absorption (CDOM) and fluorescence (FDOM) from water samples and an in situ fluorometer and of Inherent Optical Properties (IOP; light absorption and scattering) were carried out during three summer seasons 2013-2015 in the Nordic Seas and along a section across Fram Strait at 79°N in 2014-2015. Interannual changes of spatial distribution of DOM absorption obtained from water samples is presented. A three channel WET Labs WET Star fluorometer was deployed, with channels for humic- and protein-like DOM and used to assess distribution of different FDOM fractions. A relationship between fluorescence intensity of the protein-like fraction of FDOM and chlorophyll a fluorescence was found and indicated the importance of phytoplankton biomass in West Spitsbergen Current waters as a significant source of protein-like FDOM. East Greenland Current waters has low concentration of chlorophyll a, and were characterized by high humic-like FDOM fluorescence. An empirical relationship between humic-like FDOM fluorescence intensity and CDOM absorption was derived and confirms the dominance of terrigenous like CDOM on the composition of DOM in the East Greenland Current. These high resolution profile data offer a simple approach to fractionate the contribution of these two DOM source to DOM across the Fram Strait and may help refine estimates of DOC fluxes in and out of the Arctic through this region.