



Impact of continental runoff and melted sea ice on spatial distribution of carbonate parameters and nutrients in the Kara and Laptev Seas

Alexander Polukhin (1), Anna Kostyleva (2), Elizaveta Protsenko (1), Svetlana Stepanova (1), Shamil Yakubov (1), and Petr Makkaveev (1)

(1) P.P.Shirshov Institute of Oceanology of Russian Academy of Sciences, Laboratory of biohydrochemistry, Moscow, Russian Federation (polukhin@ocean.ru), (2) Southern branch of P.P.Shirshov Institute of Oceanology of Russian Academy of Sciences, Laboratory of chemistry, Gelendzhik, Russian Federation

It is well-known that the Kara and Laptev seas are strongly affected by large amount of fresh water coming from the great Siberian rivers (the Ob' River, the Yenisei River and the Lena River). Expeditions of the Shirshov Institute of Oceanology were directed on investigation of freshening of these two Arctic seas. We have large collection of data (CTD, nutrients, carbonate system parameters) from the Kara Sea expeditions (1993, 2007, 2011, 2013, 2014 years) and the newest data from the last expedition to the Kara and Laptev Seas in 2015. Employment of these materials along with archival data on mentioned seas gives us an opportunity to trace variability of hydrochemical parameters in conditions of changing climate. From year to year in our expeditions we see reduction of sea-ice cover on the water area of the Kara Sea, changes in freshwater discharge and different seasonal variability of hydrochemical structure under influence of continental runoff. Moreover we notice some falling of carbonate system parameters such as pH and alkalinity. Hereby we can estimate processes of acidification in the Russian Arctic and reveal main stressors. This work is supported by Russian Science Foundation (project №14-50-00095).