



NABOS-II Observational Program in the Arctic Ocean: New Perspectives and new Challenges

Vladimir Ivanov (1,2,3), Igor Polyakov (2), Igor Ashik (1), Andrey Pnyushkov (2), Matthew Alkire (4), Irina Repina (5), Vladimir Alexeev (2), Ian Waddington (2), Torsten Kanzow (6), Robert Rember (2), Alexander Artamonov (1), and Ilona Goszczko (7)

(1) Arctic and Antarctic Research Institute, St.Petersburg, Russian Federation, (2) International Arctic Research Center University of Alaska Fairbanks, Fairbanks, AK, USA, (3) Hydrometeorological Center of Russia, Moscow, Russian Federation, (4) University of Washington, Seattle, WA, USA, (5) A.M. Obukhov Institute of Atmospheric Physics RAS, Moscow, Russian Federation, (6) Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany, (7) Institute of Oceanology PAS, Sopot, Poland

NABOS-II observational program was launched in 2013 on the basis of new knowledge obtained during NABOS (=Nansen and Amundsen Basins Observations System) project back in 2000s. Up to now two large scale expeditions in the Eurasian sector of the Arctic Ocean were carried out in framework of NABOS-II: in 2013 and in 2015. These field studies were conducted by International Arctic Research Center (IARC) University of Alaska Fairbanks, USA in partnership with Arctic and Antarctic Research Institute (AARI) St.Petersburg Russia. The main goal of the NABOS-II project is to provide quantitative assessment of circulation and water mass transformation along the principal pathways transporting water from the Nordic Seas to the Arctic Basin under conditions of substantially reduced summer ice cover. Reduced sea ice causes changes in the water column and in the overlying atmosphere. Documenting of these changes was the main target of the NABOS-II cruises. The scope of this goal and the opportunities of extended scientific research in the Arctic, provided during NABOS expeditions, encouraged scientific institutions from the USA, Europe and Asia to raise funds, contribute to the cruise program and to send their personnel to expeditions, thus giving them a true multidisciplinary status. The ambitious mission of collecting a two year long time series of hydrographic data at 6 moorings along 126E meridian from the upper slope (250 m depth) to the deep basin (3900 m depth) in the Laptev Sea was successfully accomplished in 2015. The collected data are truly unique, since they shed new light on the structure and spatio-temporal variability of water properties and transports in the Laptev Sea, which is the key region for understanding of interaction between Atlantic water branches. This presentation describes preliminary results of performed analysis.