

The marine carbonate system represents a complex chemical equilibrium of carbon in the ocean between its habitants and physical environment, but also affects the climate on larger scales as the ocean exchanges CO₂ with the atmosphere. The state of the carbon system, thus, should be monitored on a regular basis. The measurements of physical and chemical properties of different water masses were carried out from September to October 2021 during the NABOS-2021 expedition in the Eastern part of the Arctic Ocean in the Eurasian and the Makarov basins, and northern parts of the Laptev and the East-Siberian seas. The study area was conditionally subdivided into 4 sections: - the Eurasian Basin- 1, the Eurasian Basin- 2, The Boundary Section and the East Siberian Arctic Shelf (ESAS) Section. Different components of the carbonate system: total alkalinity (TA), pH and salinity of seawater, were measured for water samples on all standard oceanographic horizons. We found that TA has low concentrations in all investigated areas. The concentration of TA in the upper layer ranges from 1,86 to 2,25 mmol/L; the concentration of TA in the deeper layer ranges from 2,14 to 2,44 mmol/L. The pH values between 7.32-8.29 were found in the sea-surface layers, and from 7.42 to 8.16, in the deeper layers. The observed salinity varied from 27‰ to 34‰ in the upper ocean layer and from 31‰ to 35‰ in the deeper layers. The obtained data parameters were used in the calculation of the carbonate system in the study area.