GC2024-PERM055

Paleomagnetic studies of marine sediments of the Russian Arctic seas under the project of state geological mapping of the territory and continental shelf of the Russian Federation at a scale of 1:1,000,000

Daria V. Elkina[1] , Evgeny A. Gusev[1] , Daria V. Ryabchuk[2] , Alexey L. Piskarev[1,3] , Alexander Y. Sergeev[2] , Anna A. Gostenina[3] , Tansylu I. Khosnullina[1,3] , Yaroslav D. Yarzhembosky[1] , Alexey A. Krylov[1]

[1] Academician I. S. GRAMBERG All-Russia Scientific Research Institute for Geology and Mineral Resources of the Ocean "VNIIOkeangeologia", Russia
[2] A.P. Karpinsky Russian Geological Research Institute, Russia
[3] St. Petersburg State University, Russia

darielfly@gmail.com

Marine sediments of the Arctic seas of the Russian Federation have been studied with varying degree of detail.

Under the project of state geological mapping of the territory and continental shelf of the Russian Federation at a scale of 1:1,000,000, sediment cores were collected using a gravity corer from the Chukchi, East Siberian, Laptev, Kara and Barents seas by FSBI «VNIIOkeangeologia» in different years [1], [2], [3]. In 2020-2021, also within the framework of this program, two cruises were carried out by FSBI «A.P. Karpinsky Russian Geological Research Institute» to the East Siberian Sea, where sediment cores were also obtained [4],[5].

Here, we present results of paleomagnetic studies on numerous sediment cores, collected during the expeditions mentioned above. The studied cores, which age varies from the Middle Pleistocene, or even from the Pliocene-Early Pleistocene, up to the Late Holocene, have shown how diverse the processes and sedimentation conditions are across the Russian Arctic shelf (for example, see [6], [7]).

[1] Gusev E.A., et al. Stratigraphy of Late Cenozoic sediments of the western Chukchi Sea: New results from shallow drilling and seismic-reflection profiling Global & Planetary Change. 68 (2009) 115.

[2] Gusev E.A., et al. On the first results of marine survey with scale of 1:1,000,000 within the sheets of the state geological map of the Russian Federation S-57,58 (East Siberian Sea). Relief and Quaternary deposits of the Arctic, Subarctic and North-West Russia. 7 (2020) 52.

[3] Gusev E.A., et al. Structure of the Perseus Rise eastern slopes (Barents Sea). Relief and Quaternary deposits of the Arctic, Subarctic and North-West Russia. 10 (2023) 67.

[4] Zhamoida V.A., et al. New data on the formation of Pliocene-Quaternary deposits of the East-Siberian Sea from the results of geological off-shore mapping of R-56-60 sheets of State Geological Map. Relief and Quaternary deposits of the Arctic, Subarctic and North-West Russia. 7 (2020) 66.

[5] Budanov L.M., et al. V. New data on seismic stratigraphy and palaeogeography of the East-Siberian Sea. Regional Geology and Metallogeny. 92 (2022) 5.

[6] Elkina D.V., et al. First results of paleomagnetic studies on sediment cores from the Eastern Arctic Seas. Relief and Quaternary deposits of the Arctic, Subarctic and North-West Russia. 8 (2022) 302.

[7] Elkina D.V., et al. First Results of the comprehensive analysis, including the paleomagnetic studies, of sediment cores from the East Siberian Sea. Uchenye Zapiski Kazanskogo Universiteta Seriya Estestvennye Nauki. 165 (2024) 646.