

HIGH RESOLUTION SEISMOACOUSTIC SURVEY OF THE QUATERNARY SEDIMENTS ON CONTINENTAL SHELVES

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Development of the present continental shelves and their sedimentary cover was adjusted by the global geological events controlled the Quaternary climate of the Earth. Reconstruction of paleogeography and paleoceanography is one of topics for the Quaternary geology of continental shelves and for engineering and ecological aspects of their industrial exploitation. In 1997-1999, number of the high resolution seismoacoustic profiles were collected by the Institute of Oceanology with acoustic profiling systems Parasound and Chirp Sonar on shelves of the White, Barents, Kara, Baltic, Black Seas and the Persian Gulf. The peculiar tidal bedforms (sand waves, ripple, smooth sand, etc.) are revealed in the Gorlo of the White Sea characterized by strong current activity. Structure of the compact Quaternary glaciomarine sediments is defined here poorly. Beneath the Dvinskoy Bay, whose environment is more quiet, the detailed structure is defined completely. The evident pockmark and plume of suspended sediment or gas associated with gas seepage was first observed at the Pechora Sea shelf. Rough inner-sedimentary surface seems to be related to degradation of relict permafrost beneath the glacial shelf. The accumulative bodies in the Sedov Trough (the Barents Sea), which are interpreted as moraines, seem to imply contact of the Franz Josef Land archipelago glacier and Novaya Zemlya archipelago glacier 18,000 years ago. The paleogeographic reconstruction suggests that the Kara Sea was much more isolated from the Barents Sea and the Atlantic Ocean during the Late Wurm. Revealed detailed structure of the Quaternary sediments on surveyed continental shelves in the Persian Gulf, Black, Baltic and other seas represents peculiarities of the regional paleoenvironment and the regional Quaternary geology.