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Deformations of Ice Cover on the North-eastern Shelf of Sakhalin Island

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Data obtained by the «FURUNO» radar were analyzed with a special method simultaneously in seven fixed points around the Molikpaq drilling platform. Ice drift velocities were measured on the north-eastern shelf of Sakhalin Island during 14-28 of May, 2003.

There were essential distinctions between ice drift velocities for different distances from the coast. These distinctions were found for the along-shore component of ice drift and for the cross-shore component particularly. Deformations of the ice cover were caused by those differences of ice drift velocities and they had significant values. Divergence had maximum positive values (stretching of ice) when the southward ice drift velocities were moderate, after tide current direction changed. Compression of the ice cover occurred, correspondently, under the opposite conditions.

The dependence of deformation parameters on the phase of a tide was well correlated with the results which were obtained at Odoptu coastal radar station. Measurements at Odoptu were produced with using the same method and under the similar physical and geographical conditions. The stable character of the obtained results allows us to forecast tide-induced compression and stretching of the ice cover. That is of great practical importance for vessels' securing in the Molikpaq area during the ice season.