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Title: *Problems of thermal abrasion within indigenous settlements of Chuckhi peninsula*

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There are serious problems with the reliability of buildings and structures in towns and villages of the Chukchi Autonomous District, Russia. Deformation of objects connected not only with the abandonment of the last 15-20 years many of the mines and towns, the lack of engineering geocryological monitoring, lack of maintenance and construction services, but also with the development of dangerous cryogenic processes: reduction of the bearing capacity of foundations for heating frozen grounds, the activation slope processes, freezing destruction of the foundations, etc. The largest settlements with a predominance of the indigenous population are located on sea coasts composed icy frozen soils, which are subjected to thermal abrasion. Retreating of shores of the Arctic – is an established fact. According to various sources, Russia for one year due to coastal retreat loses about 30 km². Thermal erosion factors can serve as lithology, temperature and ice content of frozen shores, and climatic factors (duration of ice-free time, the frequency of storms, the main wind direction, etc.).

To assess the engineering and permafrost hazards associated with thermal abrasion of Chuckhi coast, there the national settlement Lorino (pop. 1,400) was selected. It is located 500 km on the E-N-E of Anadyr on the shore of the Bering Sea. Changing the position of the coastal ledge estimated by geodesic materials (topographical surveys in the 1967-92 years.), and space image of 2010 with regard to litho-genetic conditions of the territory. As a result, from 1967 to 1992 coastal scarp retreated by an average of 12 meters (0.5 m/year), sometimes up to 45 m, but at last 20 years shore retreat velocity has decreased. From 1992 to 2010 thermal abrasion was revealed fragmentary along the coast, and its velocity was 0.05 m/year. One of the main reasons of decreasing retreat rate of the shore, composed by sand with low ice content is exposure of layer of dense clay and loam in the bottom of the shore slope. Also against the background of shore retreat stabilization there was intensification of growth of shore ravines observed.

For Lorino developed a preliminary forecast of slowing down thermal abrasion and the basic techniques to stabilize the situation. The geomorphological and topographical data used to descript the situation of shore stability within the other settlements of Chuckhi peninsula. Besides Lorino there is the same problems within Vankarem and Enurmino settlements.