

## Geological Structure of South-Western Laptev Sea Region

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Russian Eastern Arctic shelf, including Laptev Sea, represents one of the most promising offshore areas for hydrocarbon discoveries. Nevertheless, due to the absence of offshore wells, sparse grid of seismic lines and very limited geological information on the adjacent landmasses, the regional structure remains uncertain. Here we present preliminary results of onshore multidisciplinary geological field works, carried out in 2008 on the near-coastal areas of SW Laptev Sea region - Eastern Taimyr Peninsula, Paksa Cape, Anabar River mouth, etc. The area studied is located in the vicinity of the junction of Kimmerian Taimyr and Lena-Olenek fold belts with Mesozoic Enisey-Khatanga depression and Cenozoic Laptev Sea rift system. The main purpose of the study is to bring knowledge on the onshore geology for better understanding of the structure and hydrocarbon potential of Eastern Enisey-Khatanga sedimentary basin in particular and Laptev Sea region in general. During the field work we have focused on the structural geology, sedimentology, stratigraphy and paleontology of Permian, Triassic, Jurassic and Cretaceous sequences, exposed in the areas studied. The intensity of the compressional deformation on Taimyr Peninsula obviously decreases from North to South (from older, Permian-Triassic, to younger, Jurassic-Cretaceous, sequences), towards the offshore part of Enisey-Khatanga basin. We also recognized numerous mesoscale extensional structures, superimposed on the general compressional fabric of Taimyr Peninsula. The observations on the coasts of Paksa Peninsula revealed gentle folding of Upper Jurassic-Lower Cretaceous sequences. We propose, that the firstly recognized quite intensive thrust faults and folds are related to the ~E-W trending fault zones, tracing approximately along the small river's valleys. It is likely, that minor small-offset normal faults of similar strike are relatively younger and superimposed on the pre-existing compressional fabric. The youngest stage of the deformation is represented by quite regular system of fractures of along the coastal ~ N-NNW strike with some evidence of the extensional origin (joints, normal faults). We propose, that the Eastern coastline of Paksa is controlled by extensional/transensional offshore fault zone. It is likely, that the latter represents the westernmost continuation of Late Cretaceous(?) - Cenozoic Laptev Sea rift system - one of the most significant sedimentary basins on the Eastern Arctic shelf.