



The study of the Laptev Sea region seismicity and neotectonics

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The work is devoted to the first results of a joint German-Russian project on the study of seismicity and neotectonics of the Laptev sea region. seismic array and local network with a total of 25 temporary short-period seismological stations were deployed in the Lena Delta and Tiksi vicinity and operated during the first campaign of 2016-2017. The main objective of this step is to reveal the location of microseismicity and its relation with active faults.

We conducted phase picking and origin localization for the first 9-months records and obtained the spatial distribution of hundreds of microearthquakes. The records obtained were used to configure a semi-automated algorithm for microearthquake detection taking into account local noise conditions. It turned out that epicenters form clusters and in some cases correspond to the known moderate earthquakes epicentral zones in this region and active faults pattern. This allows the use of recorded weak earthquakes to simulate the waveform of stronger events using empirical Green's function technique.

Localization of microseismicity, identification of active fault zones, as well as the study of the focal mechanisms and lithosphere structure are necessary steps to investigate details of tectonic movements and seismic hazard in the Laptev sea region.

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