



New data on earthquake focal mechanisms in the eastern segment of the Arctic-Asian seismic belt

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To trace the changes in dominating stress-strain state of the crust we consider 64 earthquakes with $m_b > 4.3$ occurred in 1990–2017 within the territory (60° – 83° N, 105° – 165° E) including the spreading Gakkel Ridge, Laptev Sea Shelf, Taymyr Peninsula, Verkhoiansk and Cherskiy Ranges and Moma 'Rift' system. Focal mechanisms, scalar seismic moments, moment magnitudes and hypocentral depths of the seismic events have been calculated from the data on amplitude spectra of surface waves. The obtained results sufficiently implement the existing dataset on reliable earthquake source parameters for the study region and prove the change of the stress-strain state of the crust from extension in the Gakkel Ridge and on the Laptev Sea shelf to compression on the continent providing finer spatial details of the deformation field in the transition zones such as Buor-Khaya Bay and the Lena River Delta. On the western (Taymyr Peninsula) and eastern (the New Siberian Islands) boundaries of the inferred earlier from seismological data Laptev Sea microplate we observe predominance of compression. The results obtained are of great value to further statistical analysis of modern deformation field of the crust and various geodynamical reconstructions including verification of location of the pole of rotation between the Eurasian and North American lithospheric plates.

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