

Seismic tomography in investigations of the Earth's crust at the western margin of the Siberian craton

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In recent years reprocessing of original seismic data (deep seismic sounding and refracted waves) using the 2-D seismic tomography method elaborated at the Institute of Geophysics, Siberian Branch of the Russian Academy of Sciences has been conducted within the western margin of the Siberian Platform.

Seismotomographic sections show new additional information on the crust structure in the western margin of the Siberian Platform and its juncture with the Epi-Hercynian West Siberian Plate.

Three layers: granite-metamorphic, $V_p=5.8-6.4$ km/s, granulitic, $V_p=6.4-7.0$ km/s, and basic, $V_p=7.0-7.6$ km/s have been differentiated in the consolidated crust. The Riphean complex, $V_p=5.4-5.8$ km/s, is fixed in the volcanogenic-sedimentary cover.

Major blocks with thrust fault component towards the craton have been revealed at the Siberian Platform and West Siberian Plate juncture. In particular, the Yenisei ridge is treated as a nappe - thrust fault structure system formed during Baikalian tectonic events.

Seismotomographic investigations allow rather justified indications of the modern deep structure of the West Siberian Platform and its juncture with the West Siberian Plate and their application as initial models for paleoreconstructions.

The report is demonstrated by structural maps and seismotomographic sections.