



Crustal structure of Siberia: a new appraisal of old seismic data

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We review the structure of the crust and the sedimentary cover in an area that encompasses two largest tectonic regions, the Paleozoic West Siberia basin and the Precambrian Siberian craton, and extends from the Ural mountains in the west to the Verkoyansk Ridge/Lena river in the east, and from the Arctic shelf in the north to the Tien Shan and Altay-Sayans mountains in the south. We compiled "from scratch" all available seismic data for the region, from the late 1960-ies until present. Our compilation includes results of seismic reflection, refraction and receiver functions studies, based on old and newly acquired seismic data; data along seismic profiles are digitized with a 50 km lateral spacing which is comparable with resolution of seismic models. Seismic data on the structure of the sedimentary cover was complemented by borehole data, where available. Due to uneven quality of seismic data related both to data acquisition and interpretation, a special attention was paid to this problem and quality parameters are incorporated into the new database of regional crustal structure. We have intentionally excluded unreliable constraints, such as based on gravity modelling or tectonic similarities, or seismic data reported not along seismic reflection/ refraction profiles but as interpolated contour maps. The present database comprises detailed and reliable information on the seismic structure of the crust for most of the tectonic structures of the region and allows examining spatial correlations with tectonic and geological structures, providing the basis for studies of crustal evolution and mantle modeling.