

of Teleseismic Tomography Across the Trans-European Suture Zone

The presented study is a part of the passive seismic experiment PASSEQ 2006-2008. The PASSEQ project aims to study lithosphere – asthenosphere system around the Trans-European Suture Zone (TESZ). Nearly 200 temporary seismic stations were installed along 1200 km long and 400 km wide area from Germany throughout Czech Republic and Poland to Lithuania, and provided continuous recordings from May 2006 to June 2008. The target area of the presented study embraces all PASSEQ profile. From the PASSEQ data we picked 8308 P-wave arrivals, and used non-linear teleseismic tomography algorithm to obtain model of P-wave velocity variations in the upper mantle down to 350 km beneath the target area. We compiled crustal corrections and applied them directly to our data set. Using IASP91 velocity model as a starting model for teleseismic tomography inversion we obtained results of complex structure of the upper mantle beneath the target area. We distinguished separate zones of upper mantle with significant lateral perturbations in P-wave velocities along the PASSEQ profile. The results show higher velocities beneath the East European Craton and lower velocities to the west from the TESZ.

Primary author: JANUTYTE, Ilma (Lithuanian Geological Survey; Vilnius University)

Presenter: JANUTYTE, Ilma (Lithuanian Geological Survey; Vilnius University)

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