



3D crustal structure of central Europe by Kriging interpolation of models along wide-angle refraction profiles.

Mariusz Majdanski

Polish Academy of Sciences, Institute of Geophysics, Warsaw, Poland (mmajd@igf.fuw.edu.pl)

A precise 3D model of the crust that contains P-wave velocity distribution is necessary to start any tectonic or geodynamic interpretation. It is also essential for seismic interpretations of structures lying below (e.g. LAB, mantle) as well as for correct analysis of shallow structures using reflection seismic.

During the last decades number of wide-angle refraction experiments were performed on the territory of central and eastern Europe, POLONAISE'97, CELEBRATION 2000, SUDETES 2003 to name a few, resulting in many high quality 2D models. It is an interesting and complicated transition zone between Precambrian and Palaeozoic Platforms, where crustal thickness varies from 30 to 50 km, and the structure changes significantly. This paper presents 3D model of the velocity distribution in the crust and upper mantle interpolated from 2D models of the structure along 19 profiles. Obtained model extend to the depth of 50 km and accurately describes the main features of the crustal structures of Poland, Czech Republic, Slovakia and surrounding areas. Different interpolation techniques (Kriging, linear) are compared to assure maximum precision. The final model with estimated uncertainty might be an interesting reference of the area for other studies.