



Baikal Rift Zone: character of tectonic blocks based on P and S-waves data

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The Baikal Rift Zone (BRZ) is located on the largest continental plate on the Earth, the Euro-Asiatic plate, between the Siberian platform to NW and the region of Paleozoic deformation belt to the SE. The BRZ is an active rift of late Cenozoic age.

The aim of the BEST (**B**aikal **E**xplosion **S**eismic **T**ransects) project was to study the structure of the crust and upper mantle below the Baikal Rift and surrounding areas. The measurements were performed along two deep seismic profiles number 1 and 2. We concentrate on the profile 1 crossing BRZ from northwest to southeast. Along this profile, 10 land shot points are located, as well as air gun shots in the Baikal lake, recorded by the three arrays located in two sides of lake bank. Tectonically, the first 6 shot points of the profile 1 are located on the Siberian Craton and last 4 are on the Palaeozoic fold belt. Between these tectonic units the BRZ is located (lake Baikal).

We modeled the structure using different kinematic and dynamic programs based on raytracing (P and S-waves) and tomographic (P- waves only) methods. We present velocity models for P and S-waves across the rift from NW to SE direction. The results of the calculation of v_p/v_s ratio are also presented. Additionally, we show frequency dependence for waves penetrating the lower crust and the upper mantle below the rift. Significant differences between the BRZ and adjacent areas can be observed, in particular for the arrivals from the transition between crust and upper mantle. These differences, manifested in velocity, layer structure and physical properties (V_p/V_s),

are basic for better understanding of metamorphic processes in the investigated rift zone.