

Using HV method for imaging of fault zones (the Baikal rift)

We use of the modified Nakamura's method of H/V spectral relations for investigation of inner structure of the Tunka basin (the Baikal rift system). The depression is a half-graben bounded from the north by the steeply dipping Tunka fault. The sedimentary cover of the basin is represented by rift lacustrine, alluvial, volcanoclastic sediments and basalt flows. The measurements of ambient noise were made for long profiles crossing the basin, as well as for profiles oriented across the strike of fault zones. The interpretation of submeridional section across Tunka fault shows the vertical displacement of basement surface with amplitude at about first tens meters along the fault plane. Further to the south on 5 km the inclined step is traced. The surface of this step is covered with a basalt flows. Obviously, the main displacement which forms a deepest part of the basin is located to the south of the end of the profile. The use of the method made it possible to establish the position of individual fault branches in the zones of the seismically active Baikal-Mondy and Tunka faults under the Cenozoic sediments and allows to determine the thickness of the sediments.

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