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Source parameters of the Baikal rift system earthquakes

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This study is aimed at determination of seismic moments and dynamic parameters of earthquake sources of the Baikal rift system (BRS). Until recently it was impossible since analogue seismic station network of the Geophysical Survey SB RAS operated in Baikal area. In 2003 all seismic stations have been equipped high-sensitive digital short-period seismografs that permitted to define of seismic moment and other earthquake source parameters by spectral analysis method. For this purpose from regional earthquake catalogue were selected 60 events with magnitude M=3-5, occurred within 2003-2006 in BRS. Source parameters of earthquakes were determined using body wave Fourier displacement spectra. Models of Brune and Moskvina were utilized for earthquake source description. Seismic moments, moment magnitudes, source dimensions (radius of circular dislocation and length of rectangular bilateral fault), stress drops and mean dislocations were calculated for selected events. Comparison of the calculated parameters and obtained ones from correlative relationships of Yu.Riznichenko has shown the satisfactory agreement.