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Source parameters of Baikal rift system earthquakes

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Using S-wave Fourier displacement spectra source parameters of 110 local Baikal rift system (BRS) earthquakes with magnitude ML=3.1-4.7 were obtained. For spectra estimation digital waveforms obtained by short-period seismic station of regional network were used. In order to convert "station" spectrum to source one we took into account the response of channel, amplitude-frequency characteristic (AFC) of medium under seismic station, path effects (geometrical spreading and attenuation) and source radiation. AFC for all seismic stations were obtained by standard spectral ratios method, attenuation model of medium was estimated by coda-wave method. For source parameters estimation standard Brune's model was used. As a result of present study source parameters: seismic moments, moment magnitudes, radii, stress drop and dislocation amplitude were determinate. Comparison of seismic moment-local magnitude relations for BRS and other rift zones showed satisfactory agreement that gives evidence of existing of general pattern of lithosphere destruction and seismicity in continental crust extension zones.