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Spectral source parameters for small, local earthquakes in the Pannonian basin

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From October 2002 to August 2003, 16 earthquakes were located in the Jászság region, part of the Pannonian basin. The magnitude of the events ranged from 1.2 to 3.7. The dynamic source parameters of these earthquakes have been calculated with respect to the Brune model (1970, 1971).
Most spectra has a constant long-period level and a falloff above a corner frequency at 3-10 Hz. The seismic moments change from 2.05E+012 to 1.46E+014 Nm, stress drops from 0.14 to 3.09 bar and relative displacement from 0.19 to 3.76 mm. The source dimension (radius of a circular source area) varies between 230 and 760 m. The calculated source parameters suggest a good agreement with the scaling law for small earthquakes. The values of the stress drops are relatively low, probably indicating the low strength of the material on the fault sides.