

I have employed three simple models of the finite earthquake source: the linear unilateral model, the linear symmetrical bilateral model and the circular fault model. I computed the apparent rupture time and constructed the curve of directional dependence of the apparent rupture time. I examined this directional dependence as a function of the rupture model parameters. I calculated and plotted graphs of apparent rupture time on the focal sphere.

Then I analyzed 12 events from the 2008 West Bohemia earthquake swarm. I studied direct P waves which had been recorded at stations of the WEBNET seismic network (0,5/1/0,033 Hz — 80/60 Hz). I have measured durations of the first pulse of (i) original velocity records, and (ii) displacement curves computed numerically from the velocity records. I plotted the data on the focal sphere in the zenithal equal-area projection. I visually compared these focal sphere maps of the measured pulse duration with the focal sphere maps of the theoretically computed apparent rupture time. I attempted to assign a satisfactory source model to each map. In most cases, the unilateral fault model rupturing upwards along the B axis, or the bilateral fault model rupturing parallel to the rake direction fitted the data best.