

Sesimic wave energy estimation of the small earthquakes considering focal mechanism

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We estimated seismic wave energy of small earthquake using the time-domain integration method(Kanamori et al., 1993). To obtain more accurate estimation, we calculated the wave energy between the S-wave arrival time and the end of stopping phase. (i.e. estimating direct S-wave energy) In addition, we made a radiation pattern correction, assuming a point source mechanism. In this research, we estimated S-wave energy of the small earthquakes in the aftershock area of the 1984 Western Nagano Prefecture Earthquake. For example, the energy of an earthquake (M=3.2) was calculated as 3.2×10^8 [J] (standard deviation = 2.5×10^8 [J]) ignoring radiation pattern, and 5.8×10^8 [J] (standard deviation = 9.4×10^7 [J]) considering radiation pattern.

(Kanamori et al.,B.S.S.A., vol.83, pp330-346,1993.)