

Determination of source parameters for initial rupture process(1)

Yusuke Abiko [1], Tamao Sato [2]

[1] Earth Sci., Hirosaki Univ, [2] Earth and Environmental Sci., Hirosaki Univ

We present a method for determining the model parameters of initial rupture process by minimizing the squared residuals between the observed and synthetic waveforms of the first half-cycle of P wave velocity signals. We considered two models; one is Sato and Hirasawa's (1973) model in which the initial rise of far-field P wave velocity pulse is represented by a ramp function and the other is Sato and Kanamori's (1999) model in which the P-wave onset is characterized by a slow initial phase. A result of a numerical experiment shows that inversion of observed waveforms allows us to retrieve the source parameters of initial rupture process with small errors. We applied the inversion method to the data obtained from a seismic network in Western Nagano Prefecture.