

## Source Rupture Process and Strong Ground Motions of the 2007 Noto Hanto Earthquake

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The 2007 Noto Hanto earthquake ( $M_J 6.9$ ) on March 25, 2007 brought severe strong ground motions to near-source region. In order to analyze the strong ground motion generation during this event, the detailed investigations on the source rupture process and site amplification characteristics are required. In this study, the kinematic source rupture process of the 2007 Noto Hanto earthquake is estimated to see relationships between the rupture process and near-source strong ground motions.

The kinematic source rupture process is estimated by the multiple time-windows linear waveform inversion method (Hartzell and Heaton, 1983) with the spatiotemporal smoothing constraints (Sekiguchi *et al.*, 2000). The geometry of fault plane is assumed based on the moment tensor solution by F-net, NIED and aftershock distributions. The rupture starting point is fixed at the hypocenter determined by JMA.

The Green's functions are calculated by using one-dimensional velocity structure models. A one dimensional velocity structure model is estimated for each station by the optimization based on forward waveform modeling of a small event (Asano and Iwata, 2006). At the present moment, twelve K-NET and KiK-net stations within 80 km from the epicenter are used. The ISK006 of K-NET is excluded from the data set because nonlinear soil response during the mainshock is reported (e.g., Iwata *et al.*, 2007).

From the preliminary analysis, the rupture mainly propagated towards up-dip direction.

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