Strong motion generation area and kinematic heterogeneous source model

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    To obtain the characterized source model for prediction of strong ground motions, we estimated strong motion generation area of eight inland crustal earthquakes from near-source ground motion data. We estimated the size, position, and risetime of the strong motion generation area by waveform simulation using the empirical Green's function method. The synthetic waveforms from the source model with homogeneous rectangular faults as strong motion generation area fit well to the observed. We found a self-similar scaling relationship between the strong motion generation area and seismic moment, and clarified that this area was coincident with the asperity area derived from heterogeneous spatial slip distribution estimated by waveform inversions using low frequency (<1Hz).

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