

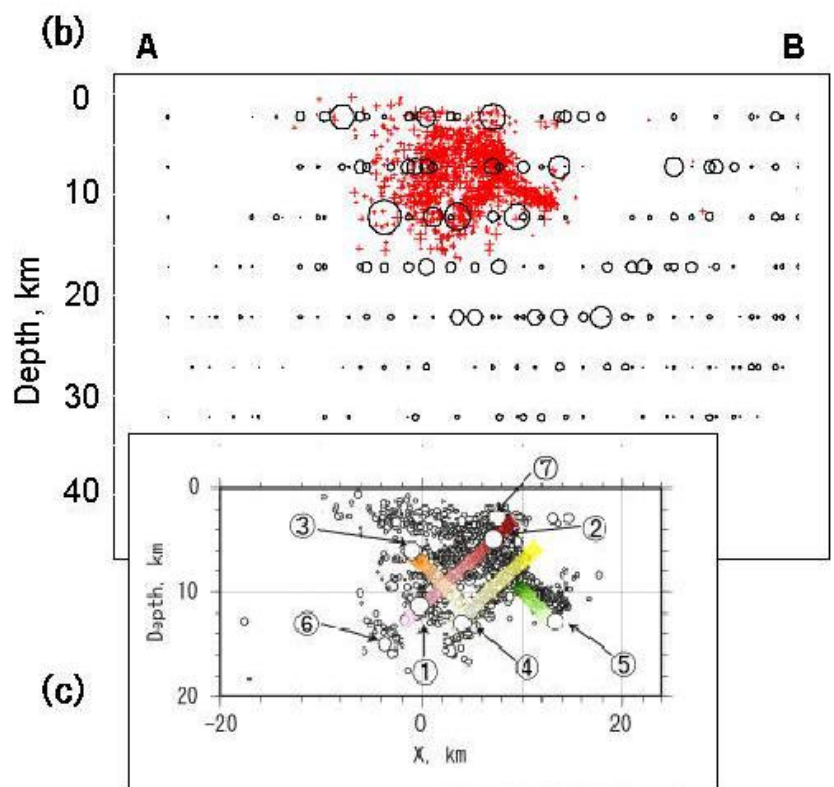
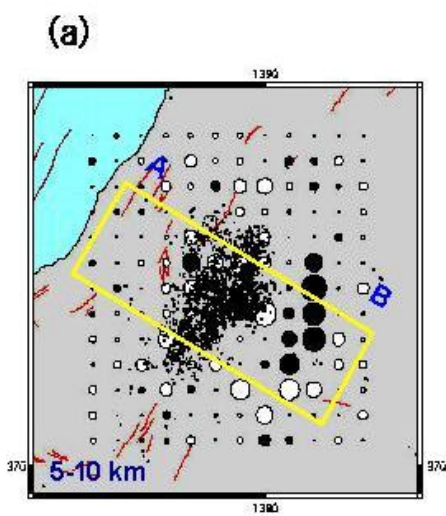
# Crustal Heterogeneity in the Source Region of the 2004 Mid Niigata Prefecture Earthquake

# Kin'ya Nishigami[1]; Yutaka Mamada[2]

[1] Disas. Prev. Res. Inst., Kyoto Univ.; [2] RCEP, DPRI, Kyoto University

<http://www.rcep.dpri.kyoto-u.ac.jp/~nishigam/>

The 2004 Mid Niigata Prefecture Earthquake (MJMA6.8) and its aftershock sequences generated complicated, i.e., several conjugate fault planes in their source region. In order to understand the occurrence process of these earthquakes, we estimated the 3D distribution of small-scale heterogeneities in the source region by inversion of coda envelopes of aftershocks, and also analyzed fault-zone trapped waves using seismograms recorded on the Obiro fault, where coseismic flexure deformation was detected. In the coda analysis, the fluctuation of coda envelopes from average decay curve was measured as the observational data and inverted to estimate a 3D distribution of relative scattering coefficient. We analyzed 138 seismograms from 30 events, recorded at 7 telemetry stations. The result shows strong scattering in the source region at depths from 0 to ~20 km, corresponding to the complicated distribution of aftershocks. We will discuss the detailed heterogeneity related to the earthquake generation by adding more data to increase the resolution. In the analysis of fault-zone trapped waves, we used the event-array method. This method has an advantage of reducing the site effect and we can detect fault-zone trapped waves by rotating the linear alignment of the event array, parallel and perpendicular to the strike of the fault. Possible trapped waves are detected for aftershocks in several limited source areas. Preliminary analysis suggests that the Obiro fault has a low velocity fault-zone connecting to both of the two parallel fault planes of the mainshock and the largest aftershock (MJMA6.5).



京大・九大合同観測(2004)