

## Seismic explosion survey on the episodic tremor and slow slip area in western Shikoku

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Recently the Japanese Cabinet Office proposed the source model that would generate an anticipated maximum size mega-thrust earthquake along the Nankai trough. The down-dip limit of this model was based on the source regions of slow earthquakes occurring along the subducting Philippine Sea plate. However, the relationship between the mega-thrust earthquake and slow earthquakes has not been clear yet. Since the generation of slow earthquakes is strongly related to dehydration, there might be some characteristic structure around the source region of slow earthquakes.

To delineate the spatial geometry between slow earthquakes and plate boundary, and to investigate the structural variation along the plate boundary, we conducted a seismic explosion survey in western Shikoku. The seismic line was aligned in the direction of NNW-SSE, passed through above one of dominant tremor clusters. We deployed 180 temporary stations with spacing of 450 m along the line. 300 kg dynamite was exploded as one shot on the midnight of 11th Dec, 2014.

We obtained good quality seismograms including many later phases. Two distinct phases with large amplitudes are identified around 11-12 sec and 14 sec in two-way travel time, respectively. The former phase is expected to be reflections from the plate boundary in comparison to previous studies. The reflection would come from around the area where high pressure fluid would exist, which was suggested by Shelly et al. (2006). We have a plan to work on the analysis to understand the accurate location and the physical property variation of the plate boundary.

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