

Seismic structure of southwest Japan derived from data recorded by OBS and Hi-net stations.

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Seismic structure under the land area of the Japan Islands has been well determined by seismic tomography method, but sub-oceanic areas are not well studied because of the lack of seismic stations. In this study, we used P wave travel time data recorded by both land stations and OBS stations, and relocated the earthquakes which occurred in the sea off Tokai, Kii peninsula, and Shikoku by using sP depth phase. We only inverted P wave travel time data from the accurately relocated earthquakes to determine a detailed 3-D P wave velocity structure under the Nankai trough area.

We used OBS stations and Hi-net stations with a longitude range from 130 to 140 degrees, and applied the tomographic method of Zhao et al. (1992).

We could relocate well sub-oceanic events by using sP depth phase, and estimate sub-oceanic 3-D seismic structure. Our results show the Philippine Sea slab subducting toward NW direction and low velocity anomalies resulting from the dehydration reactions of the subducting Philippine Sea slab.