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-dynamic pressure recorded by the in-situ measurement at tsunamigenic earthquakes

Offshore observations make it possible to detect tsunamis in advance prior to their arrivals at the shoreline. For this purpose, bottom pressure gauges are traditionally used. However, in near- or intermediate-fields, ocean bottom pressure records usually exhibit a complicated interference of signals related not only to gravitational wave, but also to hydro-acoustic and seismic waves. Network of offshore observatories recently developed and deployed in Japan provide high sampling records of ocean bottom pressure and seismic (acceleration and velocity) signals. In the present study, by taking advantage of simultaneous in-situ measurements of pressure and seismic signals that were recorded during some recent tsunamigenic earthquakes, we reveal particular features of these signals and develop a practical method for selecting tsunami signal from ocean bottom pressure records. The present data processing has been done based on frequency dependencies among hydro-acoustic, forced, and gravitational waves.

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