

## Dense seismographic array observation in and around the Boso-Peninsula (2)

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We investigated seismic activities and a crustal structure in and around the Boso Peninsula with dense seismographic array observation. A velocity structure beneath the Boso area is very complex, consisting of three layers: an overriding plate in land, northward subducting Philippine Sea plate, and westward subducting Pacific plate. The area includes a part of the source region of the 1923 Kanto Earthquake ( $M=7.9$ ) and several slow-slip events were also detected. On the other hand, seismicity beneath the Boso Peninsula is reported to be lower than that around the area, and large events did not occur in recent 50 years.

The entire Japanese Island is covered with a highly dense seismographic network. However, an interval of seismographs in the Boso Peninsula is relatively wide for populous area. And a thick sediment also prevents to detect a small event there. An accurate crustal structure and relationships between seismicity and configuration of boundary have not been well understood. Therefore, we need a dense seismographic array in the Boso Peninsula to clarify the seismic velocity structure of deeper part of the crust and subducting plate, detect micro earthquakes, and image the seismic fault of earthquakes that may destroy the metropolitan area. These seismographs are installed along the line of the northeast-southwest direction. Station intervals are about 2 km to 10 km. We install 30 stations including 10 broadband seismographs. Data are continuously transmitted to the Earthquake Research Institute, the University of Tokyo by using the Internet and satellite communication systems.

First, we investigated whether the new array enables us to detect smaller events or not beneath the array than the current networks. However, we can not detect unknown events. Next, we investigated repeating earthquakes beneath the Boso Peninsula. We found some small repeating earthquakes around the subducting Philippine Sea plate. They occurred on the edge of source regions of large interplate earthquakes or slow events. This suggests that the repeating earthquake is related with the degree of the plate coupling. Furthermore, we expect the repeating earthquake to be a clue to understand the location of asperities and also next large earthquake. Furthermore, we analyzed receiver functions from teleseismic events, and investigated conversion phases from local events. Observed waveforms have many converted phase, which seem to appear on a common boundary. We expect to estimate the location of the upper boundary of the subducting plate by these analyses.