

## Seismic activity around the source area of the 1940 Shakotan-Hanto-oki earthquake deduced from ocean bottom seismometer data

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The eastern margin of the Japan Sea is considered to be a convergent plate boundary. Many large earthquakes occurred by reverse faulting along the eastern part of the Japan Sea. There are some seismic gaps between source areas of these earthquakes. The area between the rupture areas of the 1940 Shakotan-Hanto-oki earthquake (M7.5) and the 1993 Hokkaido Nansei-oki earthquake (M7.8) is one of the seismic gaps. We have conducted a seismic observation using 19 Ocean Bottom Seismographs (OBSs) around the source area of the 1940 earthquake from April 14 to June 2, 2008. The purpose of this observation is to investigate seismic activities and examine the potential of occurrence of large earthquakes.

We use the data of 17 OBSs for hypocenter determination because 2 OBSs had a recording problem. One-dimensional P-wave velocity structure is assumed from the result of a previous seismic survey in the same region by Yamashina et al. (1999). Although few hypocenters are obtained only by land stations in this observation area during the same period, the hypocenters of 474 earthquakes are determined. Many micro-earthquakes had occurred along the Okushiri Ridge. A cluster of earthquakes is detected around the active fault under the Kaiyo Seamount which locates at the western side of the rupture area of the 1940 earthquake. On the other hand, there are few events in the rupture area of the 1940 earthquake. Tsunami analysis of the 1940 earthquake indicates that the estimated slip on the fault under the Kaiyo seamount is much smaller than the others (Okamura et al., 2005). Therefore, it is suggested that the faults where the large slips occurred during the 1940 earthquake have been locked and that the faults with the small slip in 1940 have high seismicity at present.