

Micro seismicity around the junction of Japan and Kuril Trench by using LOBS network

Asako Kuwano[1]; Masanao Shinohara[2]; Tomoaki Yamada[3]; Kimihiro Mochizuki[4]; Kazuo Nakahigashi[1]; Shin'ichi Sakai[5]; Shin'ichi Hashimoto[6]; Takeo Yagi[7]; Toshihiko Kanazawa[8]; Ryosuke Azuma[9]; Ryota Hino[9]; Yuya Machida[10]; Shinichiro Amamiya[11]; Ryo Miura[12]; Yoshio Murai[13]; Tetsuo Takanami[14]

[1] ERI; [2] ERI, Univ. Tokyo; [3] ERI, Univ. of Tokyo; [4] EOC, ERI, Univ. of Tokyo; [5] E.R.I., Univ. of Tokyo; [6] E.R.I Univ. of Tokyo; [7] ERI, Univ. of Tokyo; [8] ERI, Tokyo Univ; [9] RCPEV, Graduate School of Sci., Tohoku Univ.; [10] ISV; [11] ISV, Hokkaido University; [12] ISV, Hokkaido Univ.; [13] Institute of Seismology and Volcanology, Hokkaido Univ.; [14] ISV, Hokkaido Univ

We obtained precise hypocenter distribution around the junction of Japan and Kuril Trenches using data obtained by Long-term OBS (LOBS) observation from Nov. 2006 to June 2007. The long-term observation was conducted for eight months using 42 LOBSs. We picked P and S arrivals on the record of 42 LOBSs and also 55 land stations for 502 events. For determination of hypocenters, we used 1-D velocity structure from 2-D P-wave velocity structure estimated by seismic refraction experiments (Nakahigashi et al., 2007, 2008) and assumed $V_p/V_s=1.73$. The hypocenter distribution shows a landward dipping planar shape. The planar distribution is thought to indicate that an interplate seismicity is dominant in the study region.

From the obtained focal depth distribution of the interplate earthquakes, we found that the dip angle of the plate boundary increases at depths of 30km. And the gradient of dip angle at depths of 30km is more rapid in Kiril Trench subduction area than in Japan Trench subduction area. Moreover, seismic activity is very high in the upper plate at the junction of two trenches.