

Crustal structure across the Southern Kyushu-Palau Ridge in the Philippine Sea

Azusa Nishizawa[1]; Kentaro Kaneda[2]; Yasutaka Katagiri[3]; Junzo Kasahara[4]

[1] Hydrogr. & Oceanogr. Dep., JCG; [2] HODJ; [3] Hydrographic and Oceanographic Dept. of Japan; [4] JNC Tono

<http://www1.kaiho.mlit.go.jp/>

We conducted a wide angle seismic and multi-channel seismic experiment to investigate variation in crustal structures along the Kyushu-Palau Ridge. The experiment consists of four seismic lines, which across the southern part of the Kyushu-Parau Ridge and each profile length is 180, 175, 375 and 270 km from north to south. The controlled seismic source was a tuned array of 36 airguns with a total volume of 8,040 inch³. We shot the airgun array at an interval of 200 m (90 s) for each line. We used 200 ocean bottom seismographs (OBS) at an interval of 5 km as receivers. These data were modeled by a tomographic inversion and two-dimensional ray tracing.

Preliminary results are followings : The crustal model beneath the Oki-no-Tori-Shima island has a thick crust. The record sections obtained on the Oki-no-Tori-Shima (Parece Vela) Basin show bumpy Pn travel time curves due to large irregularity of the sea bottom topography. The thickness of the crust beneath the Parece Vela Basin is thin, about 5 km. Bathymetric high to the west of the southernmost of the Kyushu-Parau Ridge is rather thicker than that of the normal oceanic crust.