

## Structural variation of oceanic Moho at southeast of the Shatsky Rise in the Northwestern Pacific

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In the northwestern Pacific magnetic anomaly lineations are identified by many studies. It is revealed that the oceanic crust in southeast of Shatsky Rise was formed on a paleo-ridge between the Pacific Plate and Farallon Plate from Late Jurassic to the Early Cretaceous (e.g. Nakanishi et al., 1989), and considered to consist of the typical oceanic crust and mantle. In such area, understanding of crustal and mantle seismic structure and nature of the Moho is an important clue to reveal structures and formation/alternation process of the typical oceanic lithosphere. However, there are few studies which covered wide range of ages of the oceanic plate continuously by using latest seismic techniques.

In 2014 we conducted an active-source refraction/reflection survey along 1130km-long line in southeast of Shatsky Rise. Five ocean bottom seismometers (OBSs) were deployed and recovered by R/V Kairei of Japan Agency for Marine-Earth Science and Technology (JAMSTEC). We used an airgun array with a total volume of 7,800 cubic inches with firing at intervals of 200m as controlled sources. Multi-channel seismic reflection (MCS) data were also collected with a 444-channel, 6,000-m-long streamer cable.

On MCS sections strong variation of the Moho were imaged. The clear and sharp Moho was imaged up to about 50km from southwest end, then the Moho was changed to be ambiguous from this point. In some areas, the Moho was not identified. The thickness of the sedimentary layer was about  $\leq 0.3$ km except area around northeast end of survey line in which sediments from the Emperor seamounts may be supplied. The apparent velocity of uppermost mantle refractions (Pn) observed on the OBS record was about  $\leq 8.6$ km/sec. We also identified reflected waves from the upper mantle at large offsets in records (170-440km offsets), which are similar to mantle reflection phases observed in northwest Pacific Basin (Kaneda et al., 2010). As a result of forward modeling (Fujie et al., 2008) of the mantle reflection phases, depths of these reflectors were about 40km-65km, some of which may correspond to the lithosphere-asthenosphere boundary.