

Along-trough variations and characteristics in the shallow crustal structure of the incoming Philippine Sea Plate at the Nankai Trough

*Mikiya Yamashita¹, Ayako Nakanishi¹, Yasuyuki Nakamura¹, Seiichi Miura¹, Shuichi Kodaira¹, Yoshiyuki Kaneda^{1,2}

1.Japan Agency for Marine-Earth Science and Technology, 2.Nagoya University

The Shikoku Basin which produced during 30-15 Ma by backarc spreading of Philippine Sea Plate is subducting to Nankai Trough at the northern margin. It is important to reveal the characteristics of crustal structure of incoming Philippine Sea Plate for understanding the mechanism of large earthquake in Nankai seismogenic zone, the great tsunami event is also known for occurring along the Nankai Trough. In order to reduce a great deal of damage to coastal area from both strong ground motion and tsunami generation, it is necessary to understand rupture synchronization and segmentation of the great Nankai earthquake. We focus on the recent deformation structure in and around the axis of Nankai Trough. However, there are few seismic lines of legacy surveys across the Nankai trough axis. High-resolution seismic reflection surveys have been conducted around Nankai Trough by Japan Agency for Marine-Earth Science and Technology after 2011 in order to image the detailed structure near trough axis. Obtained seismic profiles indicate the many reflectors and faults in the sediments of the Shikoku Basin. We mapped the horizons identified from seismic profiles such as the top of oceanic crust, lower Shikoku Basin facies, upper Shikoku Basin facies, trough-fill sediments in the Shikoku Basin. The well-stratified turbidite deposits are recognized off Kii Peninsula. We will present the incoming crustal characteristics about the western Shikoku Basin, middle Shikoku Basin and eastern Shikoku Basin from our mapping results. This study is part of 'Research project for compound disaster mitigation on the great earthquakes and tsunamis around the Nankai Trough region' funded by MEXT, Japan.

Keywords: MCS Survey, Shikoku Basin, Philippine Sea Plate