Japan Geoscience Union Meeting 2015
(May 24th - 28th at Makuhari, Chiba, Japan)

SCG64-30 会場:A05 時間:5 月 28 日 14:15-14:30

熊野灘下に沈み込むフィリピン海プレート下の地震波速度構造
Seismic velocity structure beneath the Philippine Sea plate descending under the Kumano basin

神谷 眞一郎[1*] ; 鈴木 健介[1] ; 高橋 成実[1]
KAMIYA, Shin'ichiro[1*] ; SUZUKI, Kensuke[1] ; TAKAHASHI, Narumi[1]

[1] 海洋研究開発機構
[1]JAMSTEC

In order to monitor seismic activity in the Kumano basin, the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) developed the Dense Oceanfloor Network System for Earthquakes and Tsunami (DONET) above the Tonankai earthquake source region off the Kii Peninsula (Kaneda et al., 2009, Kawaguchi et al., 2010). DONET ocean-bottom seismic and water-pressure observation stations are connected with an optical fiber cable, and data from the sensors are transferred in real time to our laboratory at JAMSTEC. The seismic and water-pressure observations made by the DONET stations immediately above the source region of megathrust earthquakes improve our ability to detect earthquakes and tsunamis.

Kamiya et al.(2012) selected seismic events occurred in and around the Kumano basin and the Kii peninsula in the period from January 2011 to June 2012 and estimated seismic P and S velocity structures in this region using arrival time data picked from the seismic waveform recorded by the DONET system and the JMA catalog. Owing to adopting DONET data, the resolution of seismic tomography was improved beneath the Kumano basin off the Kii peninsula and the low velocity region beneath the Kumano basin above the descending Philippine Sea plate and the upper boundary of the plate beneath the DONET network were depicted clearly.

In the present study, we adopt data in the period from January 2011 to December 2014. We pick arrival times from the events occurred not only in this region but also outside of this region. We use these data and estimate seismic P and S velocity structures by the use of seismic tomography technique. For the model space, we take the latitude range of 30N-37.5N, the longitude range of 129E-141E. We use a grid interval of 0.2 degree x 0.2 degree. The new data improve the resolution of seismic tomography, in particular, the data from the events occurred outside of this region make it better in and below the lower boundary of the descending Philippine Sea plate. We are able to estimate the thickness of the descending plate and the seismic velocity structure beneath the plate in this region.