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TITLE: Prominent reflector beneath around the segmentation boundary between Tonankai-Nankai earthquake area

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ABSTRACT BODY: In the Nankai Trough subduction seismogenic zone, the Nankai and Tonankai earthquakes had often occurred simultaneously, and caused a great event. In most cases, first break of such large events of Nankai Trough usually begins from southwest off the Kii Peninsula so far. The idea of split Philippine Sea plate between the Kii Peninsula and the Shikoku Island, which explains seismicity, tectonic background, receiver function image and historical plate motion, was previously suggested. Moreover, between the Kii Peninsula and the Shikoku Island, there is a gap of deep low-frequency events observed in the belt-like zone along the strike of the subducting Philippine Sea plate.

In 2010 and 2011, we conducted the large-scale high-resolution wide-angle and reflection (MCS) seismic study, and long-term observation from off Shikoku and Kii Peninsula. Marine active source seismic data have been acquired along grid two-dimensional profiles having the total length of ~800km/year. A three-dimensional seismic tomography using active and passive seismic data observed both land and ocean bottom stations have been also performed.

From those data, we found a possible prominent reflector imaged in the offshore side in the Kii channel at the depth of ~18km. The velocity just beneath the reflector cannot be determined due to the lack of ray paths. Based of the amplitude information, we interpret the reflector as the forearc Moho based on the velocity gap (from

~6.4km/s to ~7.4km/s). However, the reflector is shallower than the forearc Moho of other area along the Nankai Trough. Similar reflectors are recognized along other seismic profiles around the Kii channel. In this presentation, we will show the result of structure analysis to understand the peculiar structure including the prominent reflector around the Kii channel. Relation between the structure and the existence of the segmentation of the Nankai megathrust earthquake or seismic gap of the deep low-frequency events will be also discussed. This study is part of 'Research concerning Interaction Between the Tokai, Tonankai and Nankai Earthquakes' funded by Ministry of Education, Culture, Sports, Science and Technology, Japan.

KEYWORDS: 3060 MARINE GEOLOGY AND GEOPHYSICS Subduction zone processes, 0900 EXPLORATION GEOPHYSICS, 8104 TECTONOPHYSICS Continental margins: convergent, 8150 TECTONOPHYSICS Plate boundary: general.

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