

3D velocity model in the region of Nankai Trough

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This is a part of the project “Comprehensive evaluation of faults information on offshore Japan”, by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). The project consists of three themes, 1) Collecting seismic survey data and building a database of offshore faults, 2) Interpreting distribution of active faults using seismic data collected, and conducting the seismic re-processing by leading-edge seismic technology for the seismic data obtained in previous decades, 3) Building the fault models for a simulation of strong motion and tsunami disaster, based on the interpreted faults. Our purpose of this study is make a 3D velocity model in the Nankai Trough to provide with the support we needs to interpret faults.

The Nankai Trough, where the Philippine sea plate is subducting beneath the Eurasian plate. Some seamounts and ridges are subducted here.

3D velocity model was constructed by seismic data and ocean bottom seismometer(OBS) refraction survey data which were obtained by a various agencies and private companies. Horizons such as acoustic basement and unconformity were interpreted using reflection seismic sections. Conrad discontinuity and Mohorovicic discontinuity were interpreted on refraction surveys and consulted previous study. Layer structure and velocity model were created on these horizons.

We obtain a result that understands geological structure in Nankai Trough. So in this session, we will take a discussion concerning structural characteristic based on the 3D velocity model.

Keywords: 3D velocity model , Nankai Trough, subduction zone