

Earthquake and Tsunami Researches in JAMSTEC

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In order to understand seismogenic processes and to mitigate earthquake and tsunami hazards, JAMSTEC has been exploring subduction seismogenic zone with imaging, sampling and monitoring by means of a state-of-arts marine technology. A surprising result from seafloor and sub-seafloor imaging in the fault zone of the 2011 Tohoku-oki earthquake is a large trench breaching co-seismic fault slip. Cores sampled from the fault zone of the Tohoku-oki earthquake shows a very low dynamic frictional coefficient which is considered to be a cause of the observed large co-seismic slip. The Nankai Trough is intensively studied as another subduction seismogenic zone where great earthquake is anticipated. JAMSTEC constructed a cable-connected seafloor network for monitoring earthquake and tsunami (DONET), and developed a tsunami early warning system using DONET. The DONET and the borehole observatories connected to DONET provide a unique opportunity to monitor various slip behaviors which never have been observed by land observations.