

Geological Survey and Geoscience

A 3-D Imaging of the Seismogenic Zone, Off Tokai

The most of large earthquakes (magnitude 8 or more) are occurred in plate subduction zones in the world. Recent our acoustic imaging technology of deep interior of the earth can image even the depth of seismogenic plate boundary in 3-D. Japan – France cooperated investigation on the Tokai seismogenic zone was conducted in 2000. We had a 45 × 5 km 3-D reflection seismic data and processed the data by using the AIST's super computer facility. Our preliminary geological interpretation suggests that the up-dip limit of seismogenic zone was clearly imaged. It is characterized by out-of-sequence thrusts that show a splay-like structure. Our interpretation is concordant with the result of geodetic inversion study of on-land GPS network data.

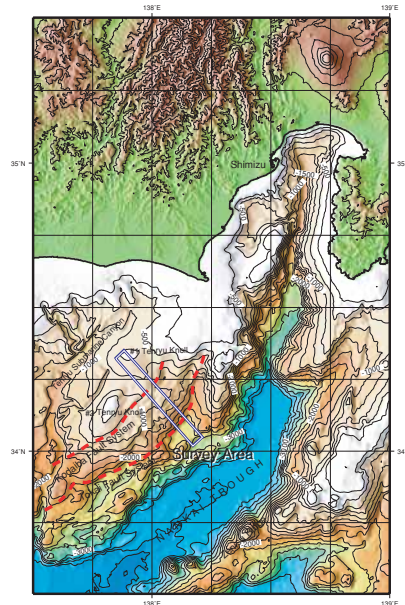


Figure shows the 3-D seismic survey area off Tokai, approximately 50 km far from Omaesaki in SW direction. The size of survey area is 45 × 5 km

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Monitoring System of Coastal Environment using Blimp and Underwater Robot

We built the underwater robot to collect the accurate data on seagrass beds distribution. It is equipped with a GPS which enables the robot to operate on programmed sites. With an installed CCD camera, which is wired to the mother vessel, we can monitor real-time robotic operation, and also take digital pictures including quadrat frame with a four million pixels. Other data, such as depth and longitude/latitude of the robot are simultaneously taken and stored in a personal computer in the mother vessel. Since pictures that are taken constitute digital data, they can be shown with fixed algorithms semi-automatically.



Underwater robot taking the picture of seagrasses within the quadrat frame

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