

Ripple structure observed in the Tenryu Submarine Canyon

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Picking reflections from seafloor in seismic data of Tokai-oki area, approximately 50 km south of Omaezaki in Shizuoka prefecture, which were results of the 3-D Seismic Programme of METI in Tokai-oki to Kumano-nada in 2002, created the bathymetric map. The bathymetric map clearly shows the detailed submarine topography on this area. In the area, various landforms such as knoll, submarine canyon, and complicated landforms varying in size are found out. An extension of the Tenryu submarine canyon appears in the deep sea area exceeding 1000 m water depth at the northwestern end in this area. On the inner floor of the canyon, large-scaled ripple structure has been visualized owing to the bathymetric map.

The Tenryu submarine canyon extends from the mouth of the Tenryu River to the Nankai-trough to the direction of the south-southwest. In this area, the submarine canyon extends toward southwest with approximately 8 km long and approximately 5 km width. The water depth is approximately 1300m at the highest northeastern end and approximately 1500m at the lowest southwestern end at a slope of approximately 1.4 degree. On the seafloor of the Tenryu submarine canyon, the ripple structure, which crosses at right angles approximately to the direction of the extension of the canyon, is observed clearly. The wave height of the ripple is approximately 3 m and as for the wavelength, approximately 100 m on the middle of the canyon floor. Also, it is observed that the ranges of the ripple somewhat overhang to the downstream side on the middle of the canyon floor. The trend of the wave high shows getting lower from northeastern end toward southwestern end.

The resolution of the bathymetric map obtained from seismic data is higher and the bathymetric map became the form of the ripple structure in the deep sea clear. After this, the bathymetric map will be expected to utilize for finding out an origin of the ripple structure, also for interpretation of other submarine canyons, other rough terrain of seafloor, etc.