

Preliminary report on the analysis of the borehole core penetrating the Median Tectonic Line 1

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Property of faults is changed depend on the physical condition. The Median Tectonic Line (MTL) is the Japan's largest on-shore exposed fault, has a long history of displacement, and the fault rocks deformed under variable conditions are exposed at the surface. The analysis of the internal structure of the MTL, therefore, helps to improve our understandings of variable fault behaviour depend on the physical conditions.

The Geological Survey of Japan, AIST drilled an observation borehole as a part of the observation network to predict the forthcoming Tonanka and Nankai earthquakes at Iitaka, Mie prefecture in 2008. The borehole reached 600.0 m and penetrated the MTL at a drilling depth of 473.9m. After the coring, a BHTV logging was carried out to reveal the condition of the borehole wall.

For the depth range of 280-480m, we compared structures observed in the core and the result of the BHTV logging, determined the orientation of the core, and described the fault rocks. The attitude of the MTL in the core is N58E40NW. Footwall of the MTL consists of Sambagawa-derived fault rocks containing two gouge zones at the depths of 474.5-475m and 474.55-476.3m. Hangingwall of the MTL consist of heterogeneously deformed Ryoke-derived mylonite. The rocks were strongly deformed at the depth intervals of 450-474.9m and 330-370 m, while those were not almost deformed at the depth interval of 370-440m. The mylonite foliation is E-W striking and dipping to north. The orientations vary depend on the strength of the deformation.

The deformation condition of Ryoke-derived mylonite and the heterogeneity of stress at the base of the seismogenic zone will be revealed based on the microstructural analysis of the mylonite. We would also like to discuss the seismic slip behavior based on the internal structure of Sambagawa-derived fault rocks.