

Active fault investigations in the offshore extension of the Miura Peninsula Faults and the Kamogawa-teichi Fault Zone

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We conducted marine active fault investigations in the offshore extension of the Miura Peninsula Faults and the Kamogawa-teichi Fault Zone as parts of the offshore active fault survey project promoted by MEXT (Ministry of Education, Culture, Sports, Science and Technology).

In this study, we conducted high-resolution multichannel seismic reflection surveys off the Kamogawa (in the Sotobo side) and off the Hota (in the Tokyo Bay side) in the offshore extension of the Kamogawa-teichi Fault Zone, and off the Kaneda (in the Tokyo Bay side) and off the Hayama (in the Sagami Bay side) in the offshore extension of the Miura Peninsula Faults for the purpose to understand distributions and geometries of active structures in these areas. We also conducted columnar core sampling of mud off the Hota and off the Hayama.

The boundary between the Hota group and Miura group off the Kamogawa are recognized as a fault with displacements on the seafloor. However, the fault is not directly connected to the trace of the Kamogawa-teichi Fault Zone in land area. In addition, the remarkable displacements on the seafloor change to flexural structures with echelon arrangements towards the land area. In contrast, although development of a large-scale submarine canyon is observed off the Hota, no remarkable active structure is recognized in this area.

The extended parts of the uplift zone traversing the Miura Peninsula are recognized off the Kaneda and Hayama as remarkable geological structures. The southern margin of the geological structures is correlated to the offshore extension of the fault zone. Deformed geological layers are also recognized at the deeper parts. In addition, multiple faults are also recognized within the uplift zone.

Keywords: Miura Peninsula Faults, Kamogawa-teichi Fault Zone, marine active fault investigation, high-resolution multichannel seismic reflection survey, offshore extension, active structure