

Reconstruction of the recent fault behavior at the onshore plate boundary in central Japan

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Northern tip of the Philippine Sea plate is colliding with the Honshu arc on the Eurasian plate at central Japan. The boundary between two plates runs through the onshore region at the northern part of Izu Peninsula. Several active faults with the highest vertical slip rate in Japan represent the boundary zone and show the distinct geomorphic and tectonic features. Although huge earthquakes have occurred in every 100 to 200 years along the Nankai trough that is the offshore subducting boundary, any destructive earthquakes are not known historically in the onshore plate boundary zone.

Therefor we reconstruct recent movement of these active faults through the integrated geologic investigation including the trench excavation and drilling surveys. The major indicators of the paleo-fault movement are periodical occurrence of the huge slope failures and landslides at the foot of fault scarp and simultaneous environmental changes at the subsiding side of the fault.

Recurrence interval and age of the last event are estimated to be 1500 years and about 1500 years ago respectively on the faults in the onshore extension of the Nankai-Suruga trough. On the other hand, 3000 years and about 3000 years ago respectively are obtained from the faults in the onshore continuation of the Sagami trough. However, no evidence of the Holocene fault movement is known at the southern foot of the Tanzawa Mountains, which is connecting the above-mentioned two active fault zones.