

Nature and timing of Holocene activity of the Koze-Matsuda fault, south Kanto, Japan

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The Koze-Matsuda fault, west of Tokyo, is one of the major onshore active faults in the Kanto area, limiting Oiso hills to the east and Ashigara plain to the west. It is expressed as a prominent west-facing fault scarp. This fault is regarded to be a landward extension of the plate boundary fault north of the Philippine Sea plate. The slip rate is an order of several meters/1000 years. Although several trenches were excavated after the 1995 Kobe earthquake, no actual fault exposure was discovered and the latest seismic event was estimated to be ca. 3000 yr BP, based on the timing of the occurrence of landslides, without direct data on the timing of paleoearthquakes. We intend to establish the nature and timing of Holocene activity of Koze-Matsuda Fault.

Trenching and drilling by our group, carried out in 2002, first succeeded to find the fault exposures, which show two subparallel low-angle reverse faults, cutting Holocene deposits and dipping northward. We found at least two faulting events, based on the stratigraphical offset, radiocarbon dates and archeological data. We estimate that the latest faulting occurred between the late 12th century and the early 14th century. The penultimate one occurred before 2550 yr BP, but the timing was not accurate enough. The amount of vertical offset by the latest and penultimate event is ca. 1.6 m at the trench wall. Considering the low angle of the fault plane, the net slip should be several meters. The latest activity, obtained from the trenching and drilling, is considerably younger than the previous estimation and recurrence time becomes shorter.

We confirmed the presence of three subparallel faults and three times of faulting on the basis of trenching and drilling in 2003. Radiocarbon dating is still going on. We will report the results after obtaining the data.