

Trenching study at Oki site across the Agematsu fault, northern part of the Kiso-sanmyaku-seien fault zone

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Kiso-sanmyaku-seien fault zone, extending for 60 km along the western margin of the Kiso Mountains, consists of three echelon faults which trend in the N-S to NE-SW direction. To evaluate the faulting history of the northern part of the Kiso-sanmyaku-seien fault zone, we trenched the Agematsu fault at Oki site. The trench site is located on the river terrace where a tectonic bulge, about 100 m long and 50-60 m wide, is developed. We dug three trenches; one on the west side of the bulge which is vertically displaced 5-6 m by the fault, and the others are on the east side of the bulge which is incidentally displaced about 2 m.

The results of observation of the trench walls are as follows. Terrace deposit is mainly composed of gravel containing boulders of 2-3 m diameter, though the upper part consists of mud flow deposit covered by humic soil. In the trench walls of the west side of the bulge, these deposits are deformed by brunched thrust faults. Several colluvial wedges correlated to faulting event are distributed beneath the fault planes. Analyzing the facies and structure of the deposits, we recognized over two faulting events. ¹⁴C ages of humic soil indicate that the latest event has been occurred during 1720-680 cal yr BP. This result agrees with the timing of the latest event on other sites along the fault zone (Fukutochizawa site on the northern part of the Magome-toge fault: after 720 cal yr BP, Tono site on the Seinaiji-toge fault: 1620-555 cal yr BP, Yoshino site on the Agematsu fault: 2870-670 cal yr BP). Therefore the fault zone from the northern part of the Magome-toge fault to the Agematsu fault was ruptured during about 700 cal yr BP. Based on the tephra analysis, it is inferred that the penultimate event occurred after the fall of the AT tephra. The detailed timing of the other older events is now analyzing.