

Paleoseismicity on the Sami and Shirakawa faults in the Atera fault system, eastern Gifu prefecture, central Japan

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The Atera fault zone in the eastern Gifu prefecture consists of the Hagiwara, Gero, Yugamine and Atere faults extending in the NW-SE direction with left-lateral strike slip, and the Sami and Shirakawa faults extending in the NE-SW direction with right-lateral strike slip. The Earthquake Research Committee evaluated that the probability of the earthquake occurrence in the future on the Sami and Shirakawa fault zones is unknown because of the lack of paleoseismological data. We carried out paleoseismological studies on the Sami and Shirakawa faults to evaluate the rupture probability in the future of these faults, using the fund of the Ministry of Education, Culture, Sports, Science and Technology. Three trenches were excavated at the Kono site on the Sami fault, and one trench on at the Nishibora site on the Shirakawa fault. V-shaped small faults and cracks were observed on the east wall of Kono C trench on the Sami fault. Radiocarbon dates of samples from inside of the cracks are about 1,100 years ago, and this indicate that the last faulting event occurred in these 1,100 years. At the Nishibora site, a clear vertical boundary between bedrock and soft sediment including many wood fragments and plant remains. However, Radiocarbon dates of samples from this sediment are almost modern, and this means this sediment are an artificial buried soil.

Keywords: Atera fault, Sami fault, Shirakawa fault, Gifu prefecture, trench excavation, paleoseismology