

Formation age of fluvial terraces around the Imogawa gorge and the average vertical slip rate of Tokiwa fault

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At the Imogawa gorge, middle reaches of the Mogami River, fluvial terraces are widely distributed, and are deformed by NNE-SSW trending reverse active faults. In this area, volcanic ashes are rarely visible within terrace deposits and overlying loamy soil, and outcrops are quite few. So, the age of terraces has not reported before our study had started. To estimate the formation age of fluvial terraces in volcanic ashes are invisible area, we have carried out drilling survey on the terrace to obtain overlying loamy soil. We have extracted some well-known wide-spread volcanic ashes within loamy soil gathered by these drillings and could estimate the approximate age of the terraces.

Below are obtained by this study.

1) The Aira-Tanzawa tephra (26-29 ka) is contained at the lowest part of loamy soil in the L1 terrace and the upper part of L2 terrace deposits. From the tephrochronology and the sedimentary facies of terrace deposits, it estimated that the L1 terrace was formed at 30-35 ka and the L2 terrace was formed at 20-25 ka, respectively.

2) The vertical displacements of the fluvial terraces at the Tokiwa area are 14-16 m (L1 terrace) and 10-12 m (L2 terrace), respectively. So the average vertical slip rates of the Tokiwa fault are 0.40-0.53 mm/yr (L1 Terrace) and 0.40-0.60 mm/yr (L2 terrace), respectively.