Paleoseismic study of the Kajikawa Fault, Kushigata Fault system, Central Japan

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The Kushigata active fault is located along the north-eastern margin of the Echigo Plain, Central Japan. Its length is about 15km. The Kajikawa Fault, southern half of the Kushigata Faultsystem, has distinct fault topography. Niigata Prefecture(2001) made clear that the Kajikawa fault has activated since about 6600yBP ago. We carried out two trenching survey at Kaiya and Kanayama, Shibata city to date the faulting events and evaluate the offset par one event.

In the Kaiya trench, two low angle reverse fault groups are outcropped. The frontal fault group cut sand and gravel bed including latest Jomon eras relics, and is unconformably overlaid by humic soil layer including many early Heian (later half of the 8th century to earlier half of the 9th century) potteries. The back-side fault group cut sand and gravel including wood fragments which dated 7950+-40yBP,8020+-130yBP, and do not dislocate soil with gravel layer including wood fragment which dated 4780+-40yBP.

In the Kanayama trench, ca 6m width flexure zone outcrops. Alteration of humic soil and sand have continuously deposited around this trench site since ca 7000yBP. It is difficult to distinguish tectonic tilting from sedimentary structure near the margin of sedimentary area. We definited that the horizon where relative height between upside and downside of flexure zone suddenly change is tectonic event one.

Due to this criteria, we recognize two event horizon, and their vertical offsets are about 1m and 2m. These means offset par one event is about 1m. The 2500yBP horizon overlies the flexure zone horizontally. The above mentioned two certain events shown in the Kaiya trench coincide to these events.

These facts show that the last event of the Kajikawa fault occurred between the latest Jomon era and the Early Heian era, and its vertical offset is about 1 meter.

It is not finished dating and analyzing, but we are going to settle date of events and its certainitiy by the meeting.