

Faulting history and segmentation of the Tokamachi Fault Zone in Niigata Prefecture, Central Japan

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Tokamachi basin, which located in the southern part of Niigata Prefecture, is bounded by active faults along both of east and west sides of its basin. Those faults are called as Tokamachi Fault Zone, which is divided into two parts, the eastern and the western segments by HERP (2005). In their fault map, the western segment distributes along the western margin of basin from north to south, then after crossing the Shinano river, it continues to the Tsunan and Miyanohara faults with direction of NE-SW to N-E on the another side of the Shinano river. HERP (2010) evaluated the timing of faulting events on both segments of Tokamachi Fault Zone, though there was no data about Tsunan and Miyanohara faults. We will present new data of activities of these faults based on geomorphological and geological surveys as well as discussion on segmentation of Tokamachi Fault Zone deduced from the paleoseismological data of this fault zone and the geological structure of this region.

On Tsunan fault, we excavated all core borings and a pit along two lines across the fault scarplet at Himizo, Tokamachi city. Fault cuts Holocene fluvial terrace with direction of NE-SW and produces east-facing-scarplet with height between 2-5 meters. We excavated boring of depth with 4-5 meters at 4 sites along the southern line and 3 sites along the north line. A pit with 7 meters in length and 2 meters in depth, was excavated on the north line.

On Miyanohara fault, which is located on the late Pleistocene fluvial terrace near the prefecture boundary between Niigata and Nagano, we excavated all core boring at Kameoka, Tsunan town. Borings with depth of 10 meters were excavated at 5 sites across the south-facing fault scarp with 5 m height and an extra-boring with depth of 21 meters on the down-thrown side of the fault scarp. We also conducted trenching surveys on the eastern segment of Tokamachi Fault Zone at 2 sites, Otajima and Baba. One of results from Otajima will be presented by another presentation in this session (Taniguchi *et al.*, 2016). About another result at Baba, we could not find any faults on the trench walls, meaning the scarplet produced not by faulting but by erosion of a blanch stream of the Shinano river.

In our presentation, we will present the history of the fault activities and slip-rates of these faults by using the results of 14 dating and tephra analysis. And, we will discuss the segmentation model of Tokamachi Fault Zone, based on comparison with those data in Tokamachi basin area and difference of geological structure both side of basin.

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