

Late Quaternary movement of active faults, in the Unzen Graben, western Kyushu

Akira Matsuoka[1]; Hiroyuki Tsutsumi[1]; Keiji Takemura[2]; Yasuhisa Hattori[1]; Daishin Komiya[3]

[1] Dept. Geophysics, Kyoto Univ.; [2] Beppu Geo. Res. Labo., Grad. Sci., Kyoto Univ.; [3] Edu and Wel, Oita Univ

The Unzen Graben, which is bounded by normal faults to the north and south, is located on the western end of the Beppu-Shimabara Graben. The faults in the Unzen Graben have developed with the growth of the Unzen volcanoes and dislocated volcanic materials such as lavas and pyroclastic deposits. The detailed location and vertical offsets of the active faults have been reported by previous studies, but the timing of faulting was poorly constrained.

The Ogura fault is located on the northern margin of the Unzen Graben and dislocates the alluvial fan formed by the Chijiwa river. We excavated a trench across the Ogura fault at Chijiwa Town in order to reveal the timing of recent faulting events. A trench excavation indicates that a faulting event may have occurred after the deposition of the AT volcanic ash, which was found in open cracks filled with fine sands.

In addition, we also found an outcrop across the Kusenbu fault inside the Unzen Graben. On the east wall, a layer containing K-Ah volcanic ash and the upper black humic soil shows nearly vertical displacement, which suggests that the Kusenbu fault has moved during the Holocene.