

Vertical Crustal Movements in the vicinity of Hanaori fault nearby the campus of Kyoto University(Subsequent Report)

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Precise leveling (spirit leveling) has been carried out in and around the campus of Kyoto University as a part of a basic practical course on earth sciences in Kyoto University. Hanaori Fault, one of the active faults in the Kinki region, runs along the east edge of the campus and the west foot of the Yoshidayama hill. To lead students to an interest in earth sciences including geodesy, monitoring the vertical crustal movements across the active fault by precise leveling was adopted as a subject of the course.

Although some cases resulted in failure, the precise measurements on the accuracy of the first order leveling have been carried out annually for 30 years since 1982. Therefore the changes of height difference in millimeter can be detected.

In this report, the results of the precise leveling along the bench mark net crossing the Hanaori Fault will be shown. The bench mark located halfway up the Yoshidayama hill was rising relative to the ground of the campus of Kyoto University at the rate of 0.001 cm/year before 2000. The rising rate has changed between 2000 and 2004; the bench mark at Yoshidayama has been rising at the rate of 0.05 cm/year since 2000. For the moment, it is not clear what has caused this change of the rising rate of Yoshidayama.

Whether the crustal movements at Yoshidayama were affected by the big earthquake "The 2011 off the Pacific coast of Tohoku Earthquake (M9.0)" or not was of interest. As a result, no effect of the earthquake on the Hanaori Fault was detected by the measurements in 2011. The bench mark at Yoshidayama is rising at the same rate before the earthquake.

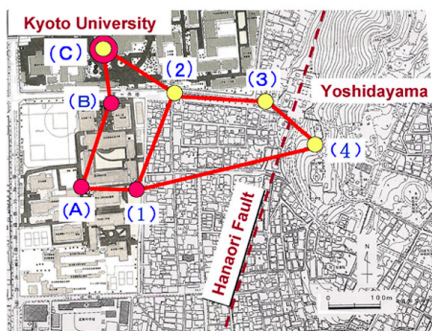


Fig. 1 Leveling net in and around the campus of Kyoto University and Yoshidayama.

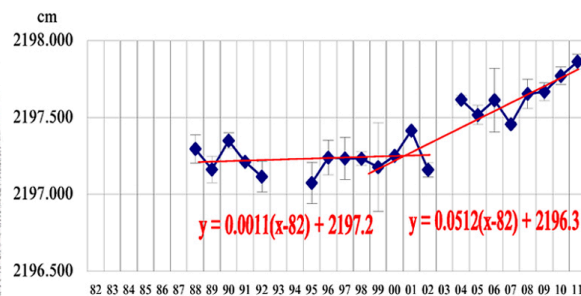


Fig. 2 Height difference change between the bench marks (1) and (4).