

## A Gravity Survey in the Southern Area of Uemachi Fault Zone

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### 1. Introduction

There is an active fault zone called Uemachi Fault Zone. It is about 44 km in length through the center part in Osaka Plain and it has a north-south strike (Osaka Pref. 1999). The fault zone is composed of some faults. Butsunenjiyama Fault at Toyonaka City lies the most northern part of the fault zone, and Kumedaikae Fault at Kishiwada City lies the most southern part. Characteristics of Kumedaikae Fault is confirmed in detail by Osaka Pref. (1997), Osaka Pref. (1998), and Osaka Pref. (1999). In these studies, the reflection survey and the boring exploration were enforced mainly. A vertical displacement and its average velocity were discussed there.

In general, neither shape nor properties of the edge of the fault zone are clarified. The shape or properties of the edge of the fault zone arouse our interest in the forming process or the behavior of the fault. To obtain the finding of this shape, gravity measurement was executed around Kumedaikae Fault which lay the southernmost part of Uemachi Fault Zone (Ryoki and Nishitani, 2010). Continuously, gravity measurement was executed across sakamoto Fault which lay north of Kumedaikae Fault in this time.

### 2. Investigation area

Some survey lines were set along the roads from the vicinity of Fucyocho where is the center part of Izumi City, Osaka Pref. to the vicinity of Murodocho. These roads almost perpendicular to Kumedaikae fault. Each survey line almost lay on a position of the active fault shown by Geographical Survey Institute (1996) a center. The length of each survey line was about 1-4.5 km. Moreover, the station interval was about 50 m.

### 3. Measuring method

The gravimeter Type-G, which was made by the LaCoste & Romberg company, was in use to measure the gravity. The provisional reference point of the gravity was set in Kinki Polytechnic College in Inabacho, Kishiwada. Closed-loop was drawn with measuring the gravity in this point before and after the investigation during a day. The gravity value in this provisional reference point was given to approval by relative measurement with the gravity value on the first order gravity station at Wakayama Local Meteorological Observatories.

### 4. Result and consideration

The result shows distribution that the northwest side as seaward is lower and the hilly ward is higher along a survey line which crosses the position assumed to be a lying behind part of the Sakamoto Fault (Geographical Survey Institute, 1998). A few rises appear on the geographical features in the northern part from the north-most survey line. If the profile of these observations and the theoretical gravity sections of the fault structure are compared, rising ratio of the gravity value in the northwest side of the presumed fault position is a little larger than another side. The above investigation result suggests that this fault be a reversed fault.

### 5. Conclusion

It was distinctly in detail decently that the gravity profiles along some survey lines were laid across Sakamoto Fault. These distributions suggest the fault structure. It is essential to execute that the three-dimensional structure is analyzed based on these profiles in the future.

### REFERENCES

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