

## Gravity anomalies in and around the Aizu Basin - Implications for groundwater flow system

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We have carried out a microgravity survey to investigate the subsurface structures of the western and eastern margin fault system of the Aizu Basin, since 2003. We got new gravity data at 594 stations with the simultaneous GPS survey. Based on total 718 gravity stations, several maps of Bouguer gravity anomalies were compiled.

It is known that fault planes migrate to other locations in time of active fault growing. The decrease in dip angle of fault plane makes the migration and appearance area of secondary faults larger.

The result of the reflection survey conducted in 2002 represented that a new active fault migrated eastward by 5km from the main fault. The result of the microgravity survey indicated that the basements in the vicinity of the western margin fault system of the Aizu Basin are divided into several blocks with sizes of 2-4km.

Gravity anomalies of the main western fault are about 30 mGal. On the other hand, anomalies caused by a new active fault are 1-2 mGal. In the Kitakata area, the eastern side of the active fault has a high anomaly in spite of the basin. This inverse distribution of gravity anomalies might be considered to be caused by a tectonic inverse of the active fault.

The eastern margin fault is divided into several segments, such as Nekoma and Wakamatsu. Gravity anomalies show inverse faults along these segments. There is a low anomaly near Nekoma segment, which may be caused by some basin structures.

There are Nekoma and Bandai volcanoes east of this fault, and these volcanoes are consist of high density rocks.

Wakamatsu segment has a steep gradient of gravity, about 5 mGal/km. This gravity anomalies show an inverse fault. There is also about 10 mGal anomalies (the mean gradient 1.6 mGal/km) beneath the eastern half of the Aizu Basin.

These gravity data are able to be compared with several types of the ground water flow systems in the Aizu Basin.