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Subsurface density structure of eastern Nagaoka city in the Niigata plain based on gravity survey,central Japan

Tatsuya Ishikawa[1*], Shigeru Toda[1], Tatsuya Ishiyama[2], Hiroshi Sato[3], Naoko Kato[3], Mai Morioka[1], Shin Koshiya[4], Toshifumi Imaizumi[2], Motonori Higashinaka[5]

[1]Earth Sci.,AUE, [2]Geography Sci.,Tohoku Univ., [3]ERI, Univ.Tokyo, [4]Iwate Univ., [5]JGI

We conducted gravity survey with LaCoste and Romberg Model-G824 gravity meter in the Nagaoka Plain, Niigata Prefecture. Each interval of observation sites is about 100 m or 200m. Error of measurement at each site is less than or equal to 0.03 mGal. The elevation of each site is leveled with RTKGPS.

Bouguer anomaly has the smallest westernmost of survey line (about 13 mGal). It suddenly increases from the 1.0km to the east and it is the maximum at about 8.5km (35mGal). It gradually decreases at about 8.5km and it is about 33 mgal at easternmost.

We employed a 2-D gravity field modeling software 2MODTM (FUGRO-LCT Inc.) to develop the subsurface density model. Taking account of the results due to the reflection survey performed together with this study, we assumed two layers in the model, the densities of which are 2.67 and 2.00g/cm3 in ascending order.

Keywords: Nagaoka city, gravity survey, Yukyuzan fault, Bouguer anomaly