

Densed gravity survey on the southeastern Kego fault system

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The Kego fault system is one of the active fault located in Fukuoka city, southwestern Japan. We have conducted densed gravity survey on the southeastern Kego fault systems. One of the purposes of the survey is to reveal the location and detailed shape of the active fault syatem. We have measured gravity value at 721 points using Scintrex CG-3+ and CG-5 gravimeter. The measurement point interval was arranged as about several tens to hundreds meters. The measured gravity values were processed with a series of correction (height, drift, tidal, the free-air, the Bouguer and terrain) in order to obtain a gravity anomaly map. We determined the Bouguer density of 2.47 g/cm³ using an objective Bayesian approach (Murata, 1993).

According to the gravity anomaly map of the Fukuoka City area that consists of not only our gravity data but also the gravity data of other institutions, the gravitational basement, which has a high density and affects to the gravity anomaly, is thought as Paleozoic Sangun metamorphic rocks and Cretaceous plutonic rocks (Sawara Granite, etc.) (Karakida et al., 1994). And a clear low gravity anomaly extension that has a strike of NW-SE is detected and coincides with the location of Kego Fault confirmed by a trenching survey (Shimoyama et al., 2005).

We will report the result of a three-dimensional analysis using GRAV3D ver. 3.0 (Li and Oldenburg, 1998).

Keywords: Densed gravity survey, active fault, gravity anomaly