Gravity anomalies of Iwate volcano, northeast Japan

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Gravity survey was carried out in the Iwate volcano, northeastern Japan, in 2004 and 2005. Two LaCoste gravimeters were used, and altitude values are based on DGPS, so Bouguer anomalies are calculated with good accuracy. The total number of new measurement points amounts to 54. The precise survey area was in a volcanic cone, Higashi-Iwate, three trails, the Ohjigoku caldera, Byobu-One of north caldera wall, Onigajo of south caldera wall in Nishi-Iwate of an old volcano, etc. Moreover, the pre-existing points around the Iwate volcano were compiled with new points and the Bouguer anomalies were calculated. From comparing some kinds of Bouguer anomalies of each assumed densities, the optimal as surface density is considered to be 2.2 - 2.3 g/cm3, and the result is common about Japanese volcanos. The residuals of the Bouguer anomalies of 2.3g/cm3 shows that the high anomaly is distributed about the Ohjigoku caldera, but there is no conspicuous feature about the volcanic cone. The reason is that the Ohjigoku caldera is old volcano, so low-density surface layer of ash or pyroclastcs are already removed, or basement rocks lies in shallow. Therefore, Higashi-Iwate volcanoe is composed of low densities rocks of large porosity, such as not only lava but pyroclasics, volcanic ashes, etc.