

Various drift rates of gPhone gravimeters obtained from short-term observations at geothermal fields

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We carried out short-term but continuous gravity observations using gPhone (spring type) gravimeters at geothermal fields. At hot spring area of Hachijojima, we obtained 1-4 months gravity data using several gPhone gravimeters at different sites and situations of the period between February 2011 and December 2012. Using the obtained data, we calculated and compared temporal variations of the drift rate. As a result, drift rates of gravimeters showed various characteristics according to location and elapsed time from installation. In many cases, it took about a month until initial drift stabilized, that is, drift rate became quasi-constant. Even after stabilized, drift rate of gPhone gravimeters remained a few microGal/day (on the other hand, the nominal drift rate of iGrav superconducting gravimeter is 0.5 microGal/month), although the magnitude of the drift rates were considerably smaller than several hundred microGal/day of CG-3M gravimeters. We will show the result of gPhone-133 replaced from Hachijojima to a geothermal power plant at Kyushu District in March 2013.

Keywords: relative gravimeter, temporal gravity change, Hachijojima, on-land observation