

Launch of a new project of airborne gravity surveys over Japan

*Yoshifumi Hiraoka¹, Yahagi Toshihiro¹, Koji Matsuo¹, Shuichi Oomori¹

1. GSI of Japan

The Geospatial Information Authority of Japan (GSI) has maintained the Japanese height system by conducting leveling survey over Japan so far. However, since this technique takes much time and costs a lot, it is difficult to reflect vertical movements of land quickly caused by such as plate motions and big earthquakes. So now GSI is planning to shift to a new height system based on a precise geoid model. In this system, people can get an altitude of their place immediately by subtracting geoid height from ellipsoidal height obtained by GNSS.

The precision of the geoid model is a key of the new height system and it strongly depends on the quality of gravity data used for calculating it. In order to collect high quality and uniform gravity data all over Japan, GSI launched a new five years project of airborne gravity surveys. The basic idea of this method is to mount a relative gravimeter on an aircraft and measure gravity values with flying a particular altitude. It enables us to obtain gravity data even at mountainous or coastal sea areas which are difficult to approach by classic land gravity surveys. By using those data with other ones such as ground data, satellite data and marine data, it is expected that we can create a new geoid model with fully sufficient accuracy for use in the new height system.

In this presentation, we will show our plan of the airborne gravity surveys and its current situation with referring to the idea of the future height system.

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