

SGD002-12

Room: 201A

Time: May 28 12:00-12:15

Various problems encountered in the airborne gravity measurements-- Records during the past 10 years

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The advantages of the airborne gravimetry is thought to be its efficiency of measurement and ability to cover the inaccessible areas. However, we feel some difficulties arising from the flight in the air. We have obtained plenty of experiences from the experimental flight since 1998 as well as the practical flight conducted after 2000. The first difficulty we had was as to the flight itself. Mounting the gravimeter on board helicopter and modifying helicopter so that the gravity measurement becomes possible are a problem that requires unnegligibly high cost. The coastal areas are usually regarded as inaccessible zones for the research ships. The helicopter, on the other hand, can fly at low height with low velocity at such areas. This is the very convenient nature for the airborne gravity measurement. We have now ten-year's career of aerial gravity measurement at the coastal areas: The measurements at Kashima-Nada sea in April 2000, Enshu-Nada sea in June 2002, Sata Pn. and Iyo-Nada sea in November 2004, Middle Noto Pn. in March 2006, Wakasa-Bay in November 2006, North Noto Pn. in October 2008, Kaminoseki, Yamaguti Pref. in November 2008, and Shimokita Pn. November 2009. Through all of these experiences we learned much about the airborne gravimetry, which will surely help improve our future measurements.

Keywords: 2004 Sata Pn.--Gyro died, 2006 Middle Noto Pn.--Interferometric Positioning failed, 2006 Wakasa Bay--Incompetent DGPS, 2008 North Noto Pn.--Attenuation of gravity astonished, 2008 Kaminoseki--Abnormal undulation of helicopter, 2009 Simokita Pn.--Helicopter into air-pocket