

Absolute gravity measurement using A10 gravimeter on coastal outcrop rocks along the Lützow-Holm bay, Antarctica

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The Antarctic ice sheet plays important role in the prediction of global environmental change. Though the ice in the eastern Antarctica occupies more than 90 % of Antarctica's ice, the mechanism of the ice sheet change has not understood clearly. One of the biggest problem is the uncertainty of the Glacial Isostatic Adjustment (GIA) effect. To improve the GIA model, a geodetic monitoring data (gravity and GNSS) should be increased. The aim of this study is precise determination of gravity field in the eastern Antarctic region and estimation of crustal movements associated with GIA. The absolute gravity measurements with GNSS measurements has started on several outcropped areas along Prince Olav Coast and Soya Coast in the framework of the 59th Japanese Antarctic Research Expedition (JARE59). The absolute gravity measurement is carried out using Micro-g LaCoste A10 gravimeter (SN: #017) in two existing station (Showa and Langhovde) and four new station (Akarui Point, Skallen, Rundvågshetta and Botunnuten). This presentation shows the detail of the absolute gravity measurements and the gravity changes in the existing station.

Keywords: Absolute gravity measurement, A10 absolute gravimeter, Ice mass movement