[EJ] Evening Poster | S (Solid Earth Sciences) | S-GD Geodesy

[S-GD01]Gravity and Geoid

convener:Takayuki Miyazaki(Geospatial Information Authority of Japan), Keiko Yamamoto(National Astronomical Observatory of Japan)

Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Recent precise gravity measurements lead to advances in many kinds of applications, e.g., investigation of internal structure of the Earth and Moon, studies of earthquake, volcano, subsidence, landslide and tsunami, monitoring ice mass balance, and so on. In this session, we call wide range of papers related to topics of gravity and geoid, including theory of gravity field, absolute/relative gravity measurements/observations, data analysis of satellite gravity missions, and development of gravity sensors.

[SGD01-P03]Ice-Sheet Mass Balance in the combined area of Shirase, Soya and Harald Glacier Basins

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Keywords:Ice Sheet Mass Balance, Satellite Gravimetry, GRACE

In this study, we estimate the mass change of the combined area of Shirase, Soya and Harald Glacier basins, caused by runoff using GRACE satellite gravimetry data, RACMO2.3 surface mass balance (SMB) model, and JARE snow-stakes data. JARE snow-stakes observation is performed on a line (traverse route), while the GRACE-derived mass variation is regional average. Therefore we cannot compare these two variations directly. However, if averaged mass variations of the traverse routes temporally correlate well with the ones of the areas, at least in principle, we can derive a regional average of the mass variation from snow-stakes data by multiplying scaling factor. To investigate the spatial representativity of mass variations of snow-stakes traverse route, we used (non-filtered) RACMO2.3 model, and compared the time series of the mass variations of the average of traverse route and area average. The results showed that the two data sets correlated well with each other. After estimating scaling factors, we finally obtained 30.0 Gt/yr, as the total runoff value of the combined area of Shirase, Soya and Harald Glaciers.