

Re-calculation of tidal factors at Syowa Station, Antarctica

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Using the parallel gravity observation with SG #016 and FG5 #203 on January, 2001, the scale factor of -58.067microGal/Volt was re-determined and its precision was improved from 1% to 0.12%. We carried out re-analysis of SG data using this value. Moreover, described in the former talk (Kobayashi et al.), we re-calculated oceanic tidal loading effect with digital topographic maps around Syowa Station using GOTIC2. The ocean model we used was NAO.99b model. We also carried out ocean tidal correction to synthetic delta factors.

The synthetic delta factors of major 4 constituents O1, K1, M2 and S2 obtained in this study differ only 0.1% from those by Sato et al. (1996). The ocean-tide corrected delta factors are 1.150, 1.134, 1.163 and 1.143 for O1, K1, M2 and S2 waves, respectively. These values agree well with the theoretical values of Dehant and Zschau (1989), 1.162, 1.132, 1.158 and 1.158.

We also report the result of tidal analysis at Syowa Station using these ten years of SG data.