

Continuous gravity observation at Ny-Alesund in the Arctic with a superconducting gravimeter CT#039

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Continuous gravity observation with a superconducting gravimeter (SG) CT#039 has been started on September 20, 1999 at Ny-Alesund (78.9N, 11.9N) in Spitsbergen, Svalbard, Norway under the support of the Ocean Hemisphere Project. This observation site is the seventh site of GGP-Japan Network, which is a global observation network with SGs of Japan. We present the preliminary analysis results for the signals longer than those of the short-period tides. The results for the seismic band will be presented by Nawa et al. at this meeting.

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We present the preliminary analysis results for the signals longer than those of the short-period tides. The results for the seismic band will be presented by Nawa et al. at this meeting. The SG has not been calibrated its scale factor yet. On this meaning, the results obtained here are preliminary ones.

The tidal analysis results were compared with the predicted tides which were computed by taking into account both the solid tide and ocean tide effects, and we found that the observed diurnal tides are much consistent with the predicted ones than those for the semi-diurnal tides. This may be due to the more complex distribution of the phase of semi-annual ocean tides than that for the diurnal ones in both the polar and north seas, and due to the closeness of the observation site to the sea (i.e. about 100 m from the nearest coast). For the long-period tides, the consistency between the observation and prediction is well. We recognized that the SG shows very stable behavior for the long-term drift, even though the analyses were made using the data obtained at the initial stage of the continuous observation just after setting up. This is an important point to observe the gravity changes which are related with a glacial rebound at their.