



Tidal gravimetry in polar regions: The impact for permanent and remote observatories during the IPY

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One focus within the upcoming International Polar Year 2007/08 will be an intensified acquisition of geodetic, geophysical and glaciological data. Observations should be carried out both at a long-term scheme, but also for shorter periods, e.g. in remote areas. Respective projects are already in the planning phase and approved by the IPY Joint Committee.

The gravity field in the polar regions, especially in Antarctica, is one of the quantities which still needs considerable improvement. Here, tidal gravity is one of the methods which can deliver valuable information in complement to other gravity observations.

The contribution will review the application of tidal gravimetry in the polar regions. Investigations made by the authors in Greenland and in Antarctica will be exemplarily discussed. The results will be compared to recent global tidal models. From tidal gravimetry, local tidal parameters, but also air-pressure regression coefficients and ocean loading parameters can be obtained. The results can be applied to further investigations, among others in absolute gravimetry, ocean-tide modelling and relative gravimetry surveys. For instance, a better ocean tide modelling will help to improve the dealiasing products utilized in the analyses of the new gravity satellite data (especially from GRACE).