



## **GOCE gravity gradient analysis in the West Antarctica using a voxel based approach**

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The objective of the GOCE mission is to map the Earth's mean gravity field with unprecedented accuracy down to spatial scales of 80 km. In addition, GOCE also observes the time-varying gravity field if the mass changes are large and concentrated. It is for example known that the ice mass changes in West Antarctica can be above the sensitivity of the GOCE gravity gradient data. For this region we will show a regional gravity field analysis using a volumetric pixel (voxel) based approach. We apply modified tesseroids with approximately equal volume in the region of interest. GOCE gravity gradients are spectrally combined with GRACE information and we estimate mass changes for the period November 2009 – June 2012. Our method is tested in a closed loop simulation and finally mass trends for West Antarctica are derived from real data.