



## **A study on the impact of using GOCE gravity gradients at lower orbit altitudes for regional gravity field recovery**

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The GOCE mission data were collected since November 2009 to the July 2012 at a constant 255 km orbit altitude. Lowering of the orbit took place after August 2012 several times. To evaluate the impact of the lower orbit altitudes of the GOCE mission on the regional gravity field recovery, we used the gridded GOCE TRF gradient data at altitudes of 255 km and 225 km at a resolution of 0.2 degree provided by GOCE+ GeoExplore Project. The Least Squares Collocation method is used to estimate the surface gravity anomalies and quasi-geoid heights using GOCE TRF gradients. The effect of different options of smoothing the GOCE TRF gravity gradients and ground truth data is also investigated. All these numerical investigations are carried out in the Auvergne test area of France where ground truth data in good quality are available.