

AGU Fall Meeting 2010

Session G14 (The GOCE Gravity Field Mission - Status and Results from the first Year of Science Operations)

Poster

Gravity field modelling over France from GOCE and surface data

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With the launch of the GOCE satellite, high quality gravity measurements down to 110 km resolution become available. For regional applications, such as levelling by GPS or geodynamic studies at lithospheric scales, a local gravity/geoid model at the highest possible resolution is needed. For that aim, the GOCE data or derived global models need to be locally validated and densified using surface gravity measurements.

Here we show how to combine and validate the GOCE models with surface gravity measurements over France using regional modelling methods based on localized functions such as spherical wavelets. We use the new gravimetric network realized by the French Institut Géographique National over France, comprising about 1000 high quality gravity data including more than 200 absolute measurements, and the dense gravimetric network. Our aim is to validate the GOCE products and derive a high resolution model of the gravity field. This will allow to improve the quality of the geoid over France, especially in mountaneous and coastal areas.