



## **Towards a better understanding of the Earth's interior and geophysical exploration research "GOCE-GDC"**

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Within the ESA STSE: GOCE+ Theme 2 a consortium of researchers from 6 European institutes investigates applications of GOCE gravity gradients in order to improve geophysical models in two different geographical areas. The first area, the Reykjanes Ridge close to Iceland, covers a mid-ocean ridge that plays a key role for creation of a new crust and for generation of ridge push driving partly plate motion. GOCE gravity gradients will be used for refined local density modelling that cannot uniquely be achieved through seismic measurements. In Africa, the second test area of the project, GOCE gravity gradients will be combined with seismic tomographic models of the continental lithospheric mantle (upper 200 km or so of the Earth's mantle that lies beneath the thin crustal layer) in order to refine an initial density model derived by 3-D modelling programs. To achieve these goals, GOCE gravity gradients will be used in combination with other available data sources such ground and marine gravity, altimetry, terrain elevation and density models, seismic tomographic and mantle flow models and crustal thickness models. However, the main target for the project is to demonstrate in particular benefits of GOCE gravity gradients for geophysical applications and interpretations.