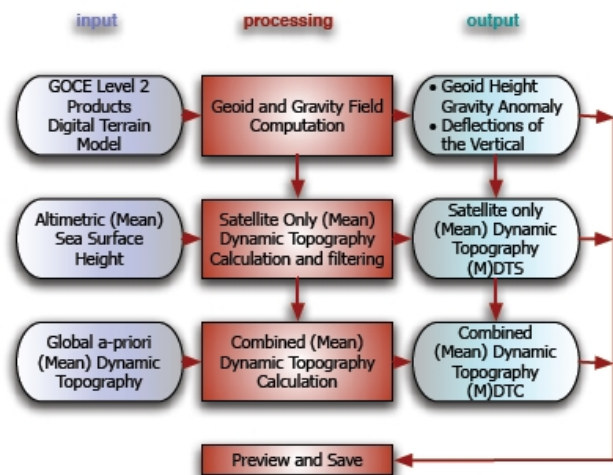


Using the Toolbox

The GOCE User Toolbox is (will be) designed so that it can be used at different levels, depending on the expertise and the needs of the user. The first level is the use of "workflows" allowing the computation of geoid/gravity field/MDT in one single step, with few inputs required. Each workflow is a succession of processes that can also be called independently by the user. Above an example of input can be seen. This consists of coefficients for a geoid expansion, a MSSH model, and a filter

Thus the user will be able to either run complete process or e.g. Do a specific filtering of the results instead of the filtering included in the complete workflow.

The main workflow can be seen below. From this several more detailed workflows have been made, six in all. These six workflows are what the first iteration of the GUT is going to be capable of doing



The main workflow for GUT. This is an overview of the functionality and other more detailed workflows exist

MORE INFO:

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DISCLAIMER

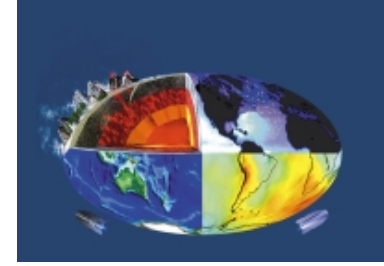
The coordinator is responsible for the brochure. It does not necessarily represent the opinion of the Community and the Community is not responsible for any use that might be made of the information appearing therein.



GOCE User Toolbox Specification Study

RESULTS



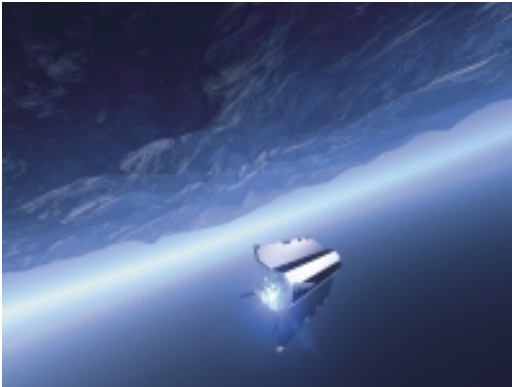


The GOCE Satellite

The Gravity Field and Steady-State Ocean Circulation Explorer (GOCE) is dedicated to measuring the Earth's gravity field and modelling the geoid with extremely high accuracy and spatial resolution. It is the first Earth Explorer Core mission to be developed as part of ESA's Living Planet Programme and is scheduled for launch in 2007.

The mission objectives are:

- To determine the gravity-field anomalies with an accuracy of 1 mGal (where 1 mGal = 10^{-5} m/s²).
- To determine the geoid with an accuracy of 1-2 cm.
- To achieve the above at a spatial resolution better than 100 km.



Background for GUTS

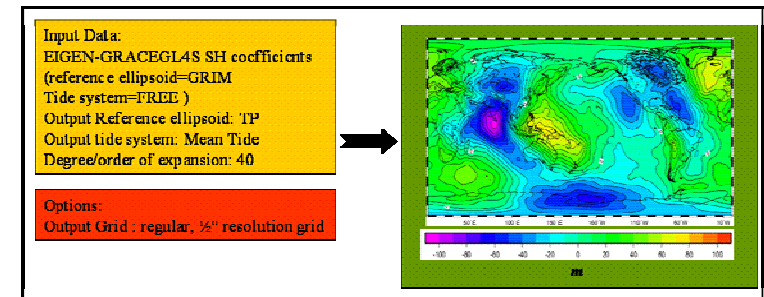
Data from the ESA GOCE mission are of fundamental importance to the oceanographic community. It is expected that in conjunction with altimetric observations, gravity data from the ESA GOCE Mission will - for the first time in history - allow access to the absolute ocean dynamic surface topography and to compute the absolute ocean surface geostrophic currents at spatial scales down to about 100 km.

At the moment, only the variable part of the sea level, and thus the geostrophic currents, can be inferred from altimetric heights with sufficient accuracy.

GUT Objectives

The objectives of the Goce User Toolbox are mainly twofold :

- The first objective is steered toward a wide group of users from different communities (Solid Earth, oceanography...). The aim is to facilitate the handling of the GOCE Level-2 products that will be made available from the GOCE HPF (High Processing Facility). This means translating the HPF GOCE Level-2 products (mainly the set of spherical harmonics coefficients and the variance-covariance error matrix) into gridded fields of geophysical quantities (geoid height, gravity anomalies, deflection from the vertical) and their errors.



- The second objective is more steered toward the oceanographic community through the computation of the ocean Mean Dynamic Topography, which, added to altimetric Sea Level Anomalies, gives access to the ocean absolute dynamic topography and the corresponding ocean geostrophic circulation.

