Geophysical Research Abstracts, Vol. 8, 06476, 2006
SRef-ID: 1607-7962/gra/EGU06-A-06476

High-level Data Processing Facility for ESA's GOCE Gravity Mission

R.Koop (1), Th. Gruber (2), R. Rummel (2)

(1) Netherlands Institute for Space Research (SRON) Sorbonnelaan 2, 3584 CA Utrecht, The Netherlands Fax: +31-30-254 0860, e-mail: R.Koop@sron.nl, (2) Institut für Astronomische und Physikalische Geodäsie (IAPG), Technische Universität München, Germany, Fax: +49-89-28923192, e-mail: Thomas.Gruber@bv.tu-muenchen.de

A High-level Processing Facility (HPF) for the science data processing of the European Space Agency's (ESA's) GOCE gravity mission is currently in the last stages of its development. During and shortly after the operational phase of GOCE the HPF will systematically produce GOCE level 2 end products such as orbits and gravity field models of different kinds, derived from the novel and highly precise GOCE gradiometry observations, GPS high-low satellite-to-satellite tracking data and additional measurements. Ten European university institutes and research facilities, having complementary expertise in gravity and geodesy related science fields, together have formed the European GOCE Gravity Consortium (EGG-C), which has been contracted by ESA to develop, implement and operate the HPF throughout the whole GOCE mission lifetime. The HPF is designed and developed with the capabilities to produce on a regular basis so-called quick-look or rapid products, that are mainly of interest for the GOCE performance monitoring, as well as final and precise products, representing the official ESA GOCE level 2 products that will become available to end-users. A unique feature of the HPF is that it will implement and operate three different gravity field analysis techniques in parallel, complemented with dedicated scientific pre-processing techniques and a thorough validation procedure for the derived gravity field models before the official ESA solution will be selected out of them. In this way (scientific) users of GOCE products (e.g. oceanographers, solid Earth scientists, geodesists and others) will benefit from the optimal exploitation of the GOCE data. The paper presents an overview of the architecture of the HPF, the status of its development and provides a summary of the planned products and their characteristics.