



Validation of newly released GOCE gravity field models

Thomas Gruber (1), Pieter Visser (2), Christian Ackermann (1), and Michael Hosse (1)

(1) Technische Universität München, Institut für Astronomische und Physikalische Geodäsie, Muenchen, Germany (thomas.gruber@tum.de, 49 89 28923178), (2) Delft Institute of Earth Observation and Space Systems (DEOS), Delft University of Technology, Netherlands (P.N.A.M.Visser@tudelft.nl, 31 15 27 85322)

New GOCE gravity field models based on 8 months of measurement phase (November 2009 until June 2010) have been released early this year to the user community. These models were obtained using three different approaches, the so-called time-wise, space-wise and direct methods. The time-wise method produces a GOCE-only gravity solution from scratch, i.e. no prior information is used, whereas the space-wise and direct methods aim at optimally combining prior information (dominated by GRACE) with GOCE observations. As part of the product validation activities of ESA's science processing facility (HPF), these GOCE gravity field models are extensively tested by different methods. For external quality control in general two methods are applied: (1) Comparison of the global models against independent GPS-levelling derived geoid heights and (2) analysis of orbit residuals computed for a number of satellites. The presentation addresses the validation procedure and includes results of the validation activities, specifically focusing on the performance of the GOCE models.