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The New GFZ RL05 GRACE Gravity Field Model Time Series

Ch. Dahle, F. Flechtner, Ch. Gruber, D. König, R. König, G. Michalak, and K.H. Neumayer

Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences, Geodesy and Remote Sensing, Potsdam, Germany (dahle@gfz-potsdam.de)

As the GRACE Science Data System (SDS) plans to publish several years (2005 - 2010) of an improved new release (RL05) of GRACE gravity field products by the 10th anniversary of the launch of the GRACE satellites (March 17th, 2012), the German Research Center for Geosciences (GFZ) as part of the SDS has reprocessed the GRACE mission data over the above-mentioned period.

The reprocessing of this new GFZ RL05 time series is based on updated Level-1B instrument data, improved background models (e.g. a new model release to de-aliase atmospheric and oceanic short-term mass variations or use of static and time variable gravity information from EIGEN-6C) and modified processing standards (e.g. for accelerometer data parameterization or GPS data processing). Two first test years of RL05 solutions already indicated both notable noise reduction and signal improvement compared to its precursor RL04.

Based on a longer time-series, we will present the final RL05 validation. Also, since in the later mission phase (starting end of 2010) the GRACE accelerometers have to be turned off approx. every 5 months due to on-board battery problems, an alternative processing method using models instead of accelerometer data is examined in order to provide an uninterrupted time series.