

Combination Service for Time-variable Gravity Field Solutions (COST-G) – current status

Adrian Jäggi (1), Barbara Jenny (1), Ulrich Meyer (1), Frank Flechtner (2), Himanshu Save (3), Carmen Boening (4), Torsten Mayer-Gürr (5), and Jean-Michel Lemoine (6)

(1) University of Bern, Astronomical Institute, Bern, Switzerland (ulrich.meyer@aiub.unibe.ch), (2) GFZ German Research Centre for Geosciences, Germany, (3) Center for Space Research, Texas, (4) Jet Propulsion Laboratory, California, (5) Graz University of Technology, Austria, (6) Centre National d'Etudes Spatiales, France

In the frame of the European Gravity Service for Improved Emergency Management (EGSIEM), a prototype service was established to combine monthly gravity field solutions from the past US-German GRACE mission in order to deliver improved gravity field solutions for applications in Earth and environmental science research. This prototype now is in transition to the Combination Service for Time-variable Gravity Field Solutions (COST-G), a Product Center of the International Gravity Field Service (IGFS) of the International Association of Geodesy (IAG).

We report on the achievements made so far and the transition of the prototype phase into regular operation. We present a comparison, validation and combination of the latest GRACE gravity field time-series of different GRACE processing centers, based on recent RL03 Level-1B GRACE observation data as well as updated background models and processing standards. A focus is laid on the effect of different background modeling strategies on the resulting gravity field models and the relative weights determined by Variance Component Estimation on solution level.