



## **Current status of GFZ's operational Earth System model GFZESM**

Robert Dill, Henryk Dobslaw, and Maik Thomas

GFZ, Helmholtz Centre Potsdam, 1.3 Earth System Modelling, Potsdam, Germany (dill@gfz-potsdam.de)

GFZ revised his operational Earth system model GFZESM to provide in quasi-real-time a consistent product data-set of gravity variations, Earth rotation excitation, and surface load deformations related to modeled atmospheric, oceanic, and hydrological mass re-distributions. ECMWFs ERA Interim and operational atmospheric data is reduced to a fixed defined high-resolution reference topography in order to avoid inconsistencies between different ECMWF model setups and due to routinely updated orography background models in the operational atmospheric data. Consistently with the new GRACE de-aliasing product AOD1B release 06 the modeled mass re-distributions from atmospheric surface pressure (ECMWF) and oceanic bottom pressure (calculated by the oceanic model MPIOM) are corrected for tidal signals and the inverse barometric effect over the ocean. In combination with the hydrological model LSDM, the following consistent set of operational products is provided daily: GRACE AOD1B release 06 spherical harmonic coefficients (d/o 180, 3h); Earth rotation excitation AAM (3h), OAM (3h), and HAM (24); non-tidal Loading Surface Deformations NTAL (0.5°, 3h), NTOL (0.5°, 3h), and HYDL(0.5°, 24h). In addition, 6-day forecasts for all the products are available.