



## **Validation of Earth orientation parameters (EOP), geophysical excitation functions (EF) and the second degree gravity field coefficients (GFC)**

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The project P9 of the research group "Earth rotation and geophysical processes" aims at the combined analysis and validation of Earth rotation observations and models (see Göttl et al. EGU 2012 poster). The EOP, EF and GFC are linked by the Earth tensor of inertia. This link is used for a sophisticated mutual validation. A least squares adjustment model which estimate the unknown tensor of inertia was developed for this purpose. Additionally variance and covariance components are estimated. The results of the adjustment model are the residuals for each data series and the adjusted tensor of inertia. It is assumed that the residuals contain the inconsistencies between the various time series. A thorough analysis of the residuals in the time and frequency domain reveals the systematic effects within the residuals. The adjusted variance and covariance components allow to check the standard deviations and in some cases the correlations given by the data centers. We present the results obtained from the combined analysis of IERS EOP, two different atmospheric and oceanic excitation functions (NCEP/ECCO from the Jet Propulsion Laboratory and ERAInterim/OMCT from the GeoForschungsZentrum (GFZ) Potsdam) and six different gravity field solutions (five GRACE solutions and one SLR solution).