



Validation of EGSIEM gravity field products with globally distributed in situ ocean bottom pressure observations

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Time variable global gravity field models that are processed by different research institutions all across Europe are currently compared and subsequently combined within the "European Gravity Field Service for Improved Emergency Management (EGSIEM)" project funded by the European Union. To objectively assess differences between the results from different groups, and also to evaluate the impact of changes in the data processing at an individual institution in preparation of a new data release, a validation of the final GRACE gravity fields against independent observations is required.

For such a validation, we apply data from a set of globally distributed ocean bottom pressure sensors. The in situ observations have been thoroughly revised for outliers, instrumental drift and jumps, and were additionally reduced for tides. GRACE monthly mean solutions are then validated with the monthly resampled in situ observations. The validation typically concentrates on seasonal to interannual signals, but in case of GRACE-based series with daily sampling available from, e.g., Kalman Smoother Solutions, also sub-monthly signal variability can be assessed.