



IfE monthly gravity field solutions using the variational equations.

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In this contribution, we present the IfE (Institut für Erdmessung) monthly gravity field solutions from GRACE KBR measurements. Our solutions, based on the classical variational approach, are obtained in two processing steps. In the first step, the orbits of both satellites are dynamically integrated and the initial state vectors together with accelerometer bias parameters of both satellites are adjusted using GRACE L1B reduced dynamic orbit. In the second step the 6-hourly-arc normal equations are accumulated and the monthly gravity field spherical coefficients up to degree and order 80 are estimated along with the unknown parameters of step 1. The geoid degree standard deviations of our solutions show a very good agreement with the official solutions of CSR and GFZ. The differences are well below 0.1 of an order of magnitude indicating the success of our implementation. Details of processing steps and the mass variations derived from our solutions are presented.