



Recent developments in global and regional gravity field determination and geophysical applications

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The new satellite gravity missions GRACE and GOCE provide a significant gain in accuracy and resolution in gravity field recovery. To exploit the signal information present in the satellite and sensor data to full content, it is reasonable to improve global solutions by regional recovery strategies. Especially in the higher frequency part of the spectrum the gravity field smoothness differs in different geographical areas. Experience with GRACE has shown that the recovery procedure should be adapted according to the characteristics in the respective area.

At Bonn University, we have published several satellite gravity field solutions in recent years. Besides the calculation of global gravity field models represented by spherical harmonic expansions, the determination of regionally refined solutions with alternative parameterizations is an important aspect of the recovery strategy. Especially for the combination of satellite data with regional data sets and the analysis and geophysical interpretation of the results alternative representations are often better suited than spherical harmonics.

The talk provides an overview of the recent developments in global and regional gravity field determination in Bonn and elsewhere.