



## **Gravity anomalies and disturbances in Germany – a new homogenous, high-resolution compilation**

Gerald Gabriel and Peter Skiba

Leibniz Institute for Applied Geophysics, Hannover, Germany

The Leibniz Institute for Applied Geophysics maintains and expands gravimetric data sets from Germany. We have recently released a new Gravity Anomaly Map of Germany at a scale of 1:1 million, which is based on all currently available observations [1]. The new map displays detailed and concise Bouguer anomalies in Germany and adjacent areas on one map sheet and will be used for working on basic and applied geoscientific problems. The raw data comprises approximately 350.000 gravity points. Most of them are stored in our Geophysics Information System (<http://www.fis-geophysik.de/>). The compilation is complemented by information from abroad, provided by individual partner agencies and the Bureau Gravimétrique International. The point distribution in the map area varies strongly. The average point distance in Germany is about 2 to 3 km. The main goal of the revision was the removal of discrepancies and artifacts caused by input errors and a uniform and state of the art processing of data originating from different sources. All corrections were recalculated by considering current international standards. The calculation of terrain corrections utilizes a high resolution digital terrain model with 25 m grid spacing. The reduction procedure involves heights referred to mean sea level (normal heights), as it is common practice since decades. Due to theoretical considerations, we have calculated a second map which is referred to the WGS84 ellipsoid rather than to the mean sea level. This is possible, since precise national and global geoid models (GCG2005 and EGM2008) are available. We discuss the quantity and the geophysical significance of the differences.

### Reference

- [1] Leibniz-Institut für Angewandte Geophysik (2010): Schwerekarte der Bundesrepublik Deutschland 1:1.000.000, Bouguer-Anomalien. – GeoCenter Scientific Cartography, Stuttgart.