

## **SC 2.4f: Gravity and Geoid in Antarctica (AntGG)**

Chair: Mirko Scheinert (Germany)

### **Terms of Reference and Objectives**

Antarctica is the region that still features the largest data gaps in terrestrial gravity. Global gravity field solutions suffer from the lack of terrestrial data in Antarctica as well as from the polar data gap originating from the orbit inclination of dedicated satellite gravity field missions (esp. GOCE with a polar data gap of 1,400 km diameter).

However, a certain coverage of terrestrial gravity data in Antarctica coverage exists. These data are heterogeneous and exhibit inconsistencies. Nevertheless, these are needed for the global high-resolution determination of the Earth's gravity field and/or for a validation of global gravity field models. Finally, terrestrial gravity data need to be applied for a regional improvement of the Antarctic geoid.

Due to the vast extension of the Antarctic continent, its hostile environment and the difficult logistic conditions it is a long-lasting task to close the Antarctic data gaps in terrestrial gravity. AntGG shall pursue this objective and shall facilitate the necessary coordination to release gridded gravity datasets for Antarctica. It plays an important role to improve the cooperation between all interested scientists of geodesy and of neighboring disciplines, mainly geophysics.

### **Program of Activities**

- Promoting the collection of surface and airborne gravity data in Antarctica;
- Promoting new gravity surveys in Antarctica, especially airborne gravimetry;
- Promoting the establishment and (re-)measurement of reference gravity stations utilizing absolute gravity meters;
- Promoting the scientific exchange of latest developments in technology (esp. airborne gravimetry) and data analysis;
- Evaluation of existing and new surface and airborne gravity data, validation of global gravity field models in Antarctica;
- Investigation of optimum strategy for the combination of gravity data of different sources;
- Release of gridded gravity anomaly dataset(s) for Antarctica to the scientific public (first release planned for 2015/2016, subsequent updates are planned when data availability improves adequately);
- Organization of special workshop on airborne geodesy and geophysics (especially aerogravimetry) with focus on Antarctica;
- Focus group for all scientists interested in Antarctic gravity and geoid, and cooperation with similar data initiatives, especially within the Scientific Committee on Antarctic Research (SCAR);

### **Delegates**

- Chair: Mirko Scheinert (Germany)
- Don Blankenship (USA)
- Alessandro Capra (Italy)
- Koichiro Doi (Japan)
- Graeme Eagles (Germany)
- Fausto Ferraccioli (UK)
- Christoph Förste (Germany)
- René Forsberg (Denmark)
- Larry Hothem (USA)
- Wilfried Jokat (Germany)
- Gary Johnston (Australia)
- Steve Kenyon (USA)
- German L. Leitchenkov (Russia)
- Jaakko Mäkinen (Finland)
- Yves Rogister (France)
- Michael Studinger (USA)

**Associates**

- Matt Amos (New Zealand)