

Sub-Commissions

SC 2.1: Gravimetry and Gravity Network

Chair: Leonid F. Vitushkin (Russia)

Vice-chair: Akito Araya (Japan)

Terms of Reference

IAG Sub-commission 2.1 "Gravimetry and gravity networks" promotes scientific studies of the methods and instruments for terrestrial (on the land, airborne, shipboard) gravity measurements, establishment of gravity networks and improvement of strategy in the measurement of gravity networks provided by growing number of absolute gravity determinations and the sites for such determinations. The Sub-commission provides the geodesy-geophysics community with the means to access the confidence in gravity measurements at the well-defined level of accuracy through organizing, in cooperation with metrology community, Consultative Committee on Mass and Related Quantities and its Working Group on Gravimetry (CCM WGG), Regional Metrology Organizations (RMO) the international comparisons of absolute gravimeters on continental scale. The Sub-commission proceeds from such point-wise gravimetry to precise gravimetry/gradiometry which should cover, in particular, the land-sea border areas to resolve still existing problem of significant biases and errors in determination.

Objectives

The Sub-commission promotes such research and development by stimulating airborne and shipboard gravimetry and gradiometry. It encourages and promotes special absolute/relative gravity campaigns, techniques and procedures for the adjustment of the results of gravity surveys on a regional scale. It promotes the research in the linking of satellite and terrestrial gravity measurements.

In the frame of realization of the "CCM-IAG Strategy for Metrology in Absolute Gravimetry" the Sub-commission in collaboration with metrology community promotes the implementation of the system of metrological support (calibration, verification, comparisons) of absolute gravimeters belonging to geodesy-geophysics community.

For the realization of these goals, the SC 2.1 sets up the working group WG 2.1.1: on techniques and metrology in terrestrial (land, marine, airborne) gravity measurements and the joint with IGFS and IGETS working group JWG2.1.1. SC2.1 appoints the Steering Committee consisted of the members experienced in the fields of gravimetry related to the activities of SC2.1 and the contact persons for European, East Asia and Western Pacific, South America and North America Gravity Networks.

According to the Resolution 2 of IAG adopted at the IUGG General Assembly in Prague in 2015 the Sub-commission supports through its JWG2.1.1 in collaboration with IGFS and IGETS the development of the Global Absolute Gravity Reference System (GAGRS) for GGOS technically and works on the standardization of absolute gravity data, software for absolute gravity measurement and appropriate information. The Sub-commission will encourage regional meetings or workshops dedicated to specific problems, where appropriate.

Program of Activities

- selection (JWG2.1.1) in collaboration with CCM WGG of the sites for regional comparisons of absolute gravimeters, as the basis for GAGRS,
- providing the results of comparisons of absolute gravimeters to data base AGrav at BKG-BGI,
- supporting the scientific investigations of absolute and relative (including the superconducting) gravity measurements on static and moving platforms,
- organizing the IAG Commission 2 Symposiums "Terrestrial Gravimetry. Static and mobile measurements – TGSM-2016 and TGSM-2019".

Steering Committee

- Chair: Leonid Vitushkin (Russia)
- Vice Chair: Akito Araya (Japan)
- Sylvain Bonvalot (France)
- Przemyslaw Dykowski (Poland)
- Christoph Förste (Germany)
- Yoichi Fukuda (Japan)
- Vojtech Palinkas (Czech Republic)
- Silvia Alicia Miranda (Argentina)
- Derek van Westrum (USA)
- Hartmut Wziontek (Germany)