International Gravity Field Service (IGFS)

web: www.igfs.net

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Objectives

IGFS is a unified "umbrella" IAG service, which will
- Coordinate collection, validation, archiving and dissemination of gravity field related data
- Coordinate courses, information materials and general public outreach relating to the earth's gravity field
- Unify gravity products for the needs of GGOS – the Global Geodetic Observing System

The IGFS coordinates the following "Level-1" IAG services and service centres
- BGI (Bureau Gravimetrique International), Toulouse, France
- IGeS (International Geoid Service), Milano, Italy
- ICET (International Center for Earth Tides), Papeete, French Polynesia
- ICGEM (International Center for Global Earth Models), Potsdam, Germany
- IDEMS (International Digital Elevation Model Service), Leicester, UK
- ("Global Geodynamics Project" of superconducting gravimeters - currently in transition to become an IAG Service).

The overall goal of IGFS is to coordinate the servicing of the geodetic and geophysical community with gravity field-related data, software and information. The combined data of the IGFS entities data will include both satellite-derived global models, terrestrial, airborne, satellite and marine gravity observations, earth tide data, GPS leveling data, digital models of terrain and bathymetry, as well as ocean gravity field and geoid from satellite altimetry. Both the static and the temporal variations of the gravity field will be covered by the IGFS.

IGFS will – in cooperation with the services - make a special effort in trying to secure release of data from national and international institutions holding data on the spatial and temporal gravity variations, geoid and the surface heights of the Earth, to make them widely available to the scientific community.

IGFS will coordinate regional conferences, tutorials and schools to train young scientists and members of national institutions in the various aspects of the gravity field science, computations, and data collection. IGFS will maintain a publication activity related to the gravity field, especially through "Newton's Bulletin".

Structure

The Service is organized by means of the following structure:
- Advisory Board
- Central Bureau
- Technical Centre
- Services

The Advisory Board is composed of:
- Directors (or their delegates) of each of the Centres of IGFS
- Chairmen of the IGFS working groups
- Presidents (or their delegates) of the IAG Commissions related to the Service work
- A representative of the IAG Executive Committee (IAG-EC)
- Two members appointed among the affiliates.

The Advisory Board
- Coordinate the scientific strategy
- Coordinates the joint activity of the Centres
- Oversees the participation of the Service in international projects
- Presents to the IAG-EC proposals for associating new centres to the Service
- Elects the IGFS affiliates upon nomination by the Centres or affiliates.

The Advisory Board is appointed for four years between IUGG General Assemblies. The existing Advisory Board selects new members as required, and nominates a president for the IGFS. The election is to be confirmed by the IAG Executive Committee. The Advisory Board makes decisions by majority vote; it can also vote by email. The Advisory Board decides the Terms of Reference for IGFS.

IGFS Services and Centres

The IGFS Services and Centres are the “operating arms” of IGFS. The Centres are committed to produce services and products related to the gravity field of the Earth and/or the planets. The Centres within IGFS are approved by the IAG EC. Centres can include bodies of structures external to the IAG (e.g., the BGI which is reporting to FAGS). The Centres will have their own governing bodies, nominated according to internal rules, also taking into account the interests of the supporting entities. In particular, each governing body will have a Director, elected according to internal rules.

Centres will maintain a list of data and products, providing them to the general public according to their policy of dissemination; they will deliver services in the form of data archiving, data analysis, dissemation, software, training, initiation of measurement and data compilation campaigns etc. The activities of each Centre will be reviewed annually by the IAG-EC. The IGFS Technical Centre, located at the National Geospatial-Intelligence Agency, USA, will play a special role in advice on global models, geoid and gravity, especially related to the global ultra-high resolution geopotential models (EGM2008 and successors).

IGFS Central Bureau

The IGFS Central Bureau will act as the central coordination and communication centre of the IGFS. The Central Bureau will provide a link between the IGFS entities, IAG, and external projects, networks or organizations (oceanic, atmospheric, hydrologic, …); provide link to the GGOS bureau and communicate their requirements and recommendations to the IGFS, and implement standards and recommendations related to gravity field observations, secure consistency with geometric standards, and promote their use within the geoscientific community. The Central Bureau will also maintain the web information of the IGFS, and arrange gravity field-related meetings and workshops.

Working groups

JWG2.1: International and Regional Comparison Campaigns of Absolute Gravimeters (joint with IAG Comm. 2). Chair: V. Palinkas

JWG2.2: Absolute Gravimetry and Absolute Gravity Reference System (joint with IAG Comm. 2). Chair: H.Wilmes.

JWG2.3: Assessment of GOCE Geopotential Models (joint with IAG Comm. 2). Chair: J. Huang.

Working Group on Vertical Datum Standardization (joint with GGOS Theme 1 - Global Vertical Datum). Chair: L. Sanchez

IGFS Advisory Board

- S C Kenyon (USA, Technical Centre chair)
- J P Barriot (French Polynesia)
- S Bonvalot (France)
- R Barzaghi (Italy)
- F Barthelmes (Germany)
- P Berry (UK)
- U Marti (Switzerland)
- S Bettadpur (USA)
- H Denker (Germany)
- J Huang (Canada)
- L Sanchez (Germany/Columbia)
- H Wilmes (Germany)
- M G Sideris (Canada)