



INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS
UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE

The IUGG Electronic Journal

Volume 18 No. 2 (1 February 2018)

This informal newsletter is intended to keep IUGG Member National Committees informed about the activities of the IUGG Associations, and actions of the IUGG Secretariat. Past issues are posted on the IUGG website (<http://www.iugg.org/publications/ejournals/>). Please forward this message to those who will benefit from the information. Your comments are welcome.

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1. IUGG Committees for the 27th IUGG General Assembly appointed

The IUGG President appointed members to several Union Committees for the 27th IUGG General Assembly (Montreal, Canada, 9-18 July 2019) responsible for (i) selections of the candidates to be included in the ballot for the election of the IUGG Bureau and Finance Committee (Nominating Committee); (ii) for comparison of the sites proposed for the next IUGG General Assembly (Site Comparison Committee); (iii) for resolutions of the IUGG General Assembly (Resolution Committee); as well as to three award committees: (iv) the Gold Medal Committee; (v) the Fellow Selection Committee; and (vi) the Early Career Scientist Award Committee. Below is the membership of the committees.

Nominating Committee

- Tom Beer (Australia, IAMAS), Chair
- Jaime Urrutia Fucugauchi (Mexico, IAGA)
- Michelle Grobbelaar (South Africa, IASPEI)
- Kuniyoshi Takeuchi (Japan, IAHS)

Site Comparison Committee

- Eduard Petrovsky (Czech Republic, IAGA), Chair
- Xiao Cunde (China, IACS)
- Laura Gallardo Klenner (Chile, IAMAS)

- Stefania Sparnocchia (Italy, IAPSO)
- Alik Ismail-Zadeh (Germany/Russia, IUGG, ex-officio)

Resolution Committee

- Harsh Gupta (India, IASPEI), Chair
- Zuheir Altamimi (France, IAG)
- Ray Cas (Australia, IAVCEI)
- Georgia Destouni (Sweden, IAHS)
- Christa von Hillebrandt-Andrade (USA, IAPSO)

Gold Medal Committee

- Uri Shamir (Israel, IAHS), Chair
- Jeffrey Freymueller (USA, IAG)
- Brian Hoskins (UK, IAMAS)
- Valerie Masson-Delmotte (France, IACS)
- Trevor McDougall (Australia, IAPSO)
- Inez Staciari Batista (Brazil, IAGA)
- Roberto Sulpizio (Italy, IAVCEI)
- Zhongliang Wu (China, IASPEI)
- Alik Ismail-Zadeh (Germany/Russia, IUGG, ex-officio)

Fellow Selection Committee

- Joyce E. Penner (USA, IAMAS), Chair
- Members: Hugo Delgado Granados (Mexico, IAVCEI)
- Monika Korte (Germany, IAGA)
- Eugene Morozov (Russia, IAPSO)
- Kenji Satake (Japan, IASPEI)
- Chris Rizos (Australia, IUGG, ex-officio)

Early Career Scientist Award Committee

- Jenny Baeseman (USA, IACS), Chair
- Gregory Foltz (USA, IAPSO)
- Salvatore Grimaldi (Italy, IAHS)
- Futoshi Takahashi (Japan, IAGA)
- Thorsten Wagener (UK, IUGG, Chair of the Capacity Building and Education Committee)

2. Geoscience education events selected for IUGG support in 2018

IUGG awarded six grants (US\$15,000 in total) to support workshops and training schools organized by the Abdus Salam International Centre for Theoretical Physics (ICTP) in 2018 as recommended by the IUGG Committee on Capacity Building and Education and in accordance with the Memorandum of Understanding between IUGG and ICTP signed in 2015. The list of the events co-sponsored by IUGG is as follows:

- Integrated Environmental Health Impact Assessment (IEHIA) on Air Pollution and Climate Change in Mediterranean Areas, ICTP, Trieste, Italy, 23-27 April.
- Joint Summer School on Sustainable Development: Integrated Modelling Tools for Climate, Land Use, Energy and Water (CLEW) Strategies, ICTP, Trieste, Italy, 4-29 June.
- Summer School on Theory, Mechanisms and Hierarchical Modelling of Climate Dynamics: Multiple Equilibria in the Climate System, ICTP, Trieste, Italy, 25 June - 5 July.
- The Coastal Ocean Environment Summer School, Ghana, 30 July – 5 August.
- Second Advanced School on Regional Climate Modeling and Extreme Events over South America, Sao Paulo, Brazil, dates TBD.
- Summer School in Seismology and Tectonic Geodesy, Tunisia, dates TBD.

3. IUGG at the UNESCO Conference on Landslides

IUGG continues to work closely with various scientific programs of the United Nations Educational, Scientific and Cultural Organization (UNESCO). The UNESCO Conference on Landslides was organized by the International Consortium for Landslides (ICL, an IUGG Affiliate Member) and the International Programme on Landslides (IPL) supported by UNESCO and other international and intergovernmental organizations. During the conference, ICL organized a business meeting related to the Sendai Partnerships in Disaster Risk Reduction (DRR) and Promotion of Landslide Science, signed in 2015 in Sendai, Japan, by several international and intergovernmental organizations including IUGG. Agenda topics of the business meeting included reports by the officers, actions after the last World Forum on Landslides (WFL) held in 2017 in Slovenia, actions toward the next WLF in 2020, and new projects approval. IUGG was invited to become a partner of the World Landslide Forum to be held in Kyoto, Japan in 2020, and was asked to co-organize a symposium on landslides-induced tsunamis at the forum attracting attention of governments to the problems of landslides and tsunamis. Alik Ismail-Zadeh represented the Union at the conference and the business meeting.

During the conference, Alik Ismail-Zadeh, as IUGG Secretary General and Council Member of the UNESCO-IUGS International Geoscience Programme, met with Dr. Flavia Schlegel, UNESCO Assistant Director General for Natural Sciences (ADG/SC), and discussed possibilities for strengthening the cooperation between IUGG and UNESCO in the International Geoscience Programme and to disaster risk reduction (DRR). DRR as an interdisciplinary subject is well developed by individual units of UNESCO, however, cooperation in DRR of the units (sectors and divisions of UNESCO) in education, mitigation and resilience sometimes seems to be weak. To integrate knowledge on DRR science and education and to coordinate the work among the UNESCO units and international NGOs like IUGG and other ICSU scientific unions and interdisciplinary bodies, Ismail-Zadeh proposed UNESCO to consider a possibility to organize a series of conferences on Disaster Science bringing together experts from UNESCO Natural Science and Social Science Sections, the Intergovernmental Oceanographic Commission, the International Hydrological Programme, and external organizations dealing with the topics of DRR including UNISDR.

4. Report on the IUGG project “Determination of the Earth’s mathematical surface in Africa towards the realization of the International Height Reference System”

This report summarizes the main activities and achievements of the project “Determination of the Earth’s mathematical surface in Africa towards the realization of the International Height Reference System (IHRS)” sponsored by IUGG. The grant ran in the period 2016–2017. The lead applicant was the International Association of Geodesy (IAG), and the supporting applicant was the International

Association of Seismology and Physics of the Earth's Interior (IASPEI). Principal Investigators of the project were Hussein Abd-Elmotaal of the Minia University, Egypt, an IAG representative, and Rashad Kebeasy of the National Research Institute of Astronomy and Geophysics, Egypt, an IASPEI representative.

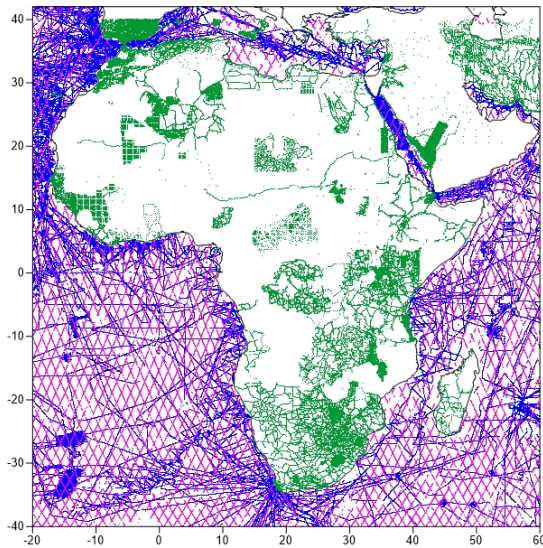


Fig. 1

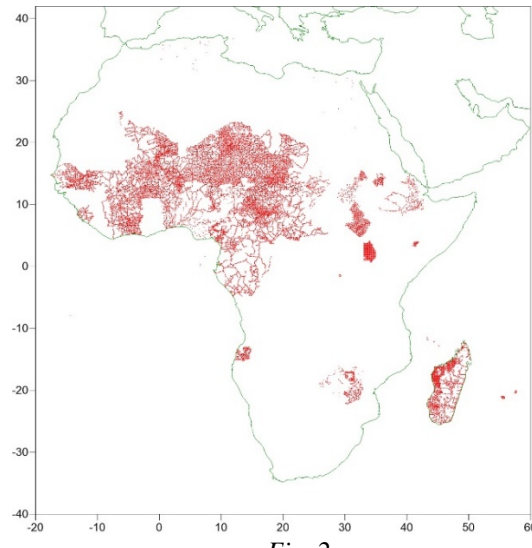


Fig. 2

Collecting Gravity Data. This task represented the core of the project. It was a difficult task as most institutions are reluctant to release their gravity data. Figure 1 shows the land, shipborne and altimetry derived gravity anomaly data available before the project started (Abd-Elmotaal et al., 2015). In 2016, a new dataset on land became available from the Bureau Gravimétrique International (thanks to Sylvain Bonvalot). This new data set is illustrated in Fig. 2, whose locations are mainly in the very large data gaps of the previously available dataset. The new data set consists of 33971 gravity data points, with little overlap between the old and the new data sets on land. The free-air gravity anomalies for the new data set range between -148.4 mGal and 453.6 mGal with an average of about 4.9 mGal and a standard deviation of 28.3 mGal. As illustrated in Figs. 1 and 2, the current gravity database for Africa still contains significantly large data gaps. These large data gaps affect the interpolation precision of the reduced gravity anomalies needed for the determination of the Earth's mathematical surface for Africa. Hence, an interpolation technique that can be used for a gravity interpolation within large data gaps has been developed (Abd-Elmotaal and Kühtreiber, 2017).

Detailed digital terrain model for Africa. A fine digital terrain model (DTM) for Africa and the surrounding region covering the window ($42^{\circ}\text{S} \leq \phi \leq 44^{\circ}\text{N}$; $22^{\circ}\text{W} \leq \lambda \leq 62^{\circ}\text{E}$) using the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) Global Digital Elevation Model (GDEM) at a $3'' \times 3''$ resolution (which corresponds to roughly 90 m resolution on the Earth's surface) has been created (Abd-Elmotaal et al., 2017). The ASTER-GDEM model, which is available only on land, has been smoothed from its original $1'' \times 1''$ resolution to $3'' \times 3''$ resolution using the block average operator technique employing special characteristics at the coastal borders. The $30'' \times 30''$ Global Bathymetry and Elevation Data at 30 Arc Seconds Resolution (SRTM30+) has been used, after being interpolated to $3'' \times 3''$ grid size, to fill-in the missing sea regions of the ASTER-GDEM model.

Gravity Database of Africa. The currently available land, shipborne, and altimetry-derived gravity datasets consist of 154037, 971945, and 119249 gravity data points, respectively. The land data have been filtered on a $1' \times 1'$ grid (i.e., in each cell of $1' \times 1'$, only one data point, the closest to the cell-center, has been selected), and the number of land data after the grid filtering became 127067 points. The shipborne data have been filtered on a $3' \times 3'$ grid, and the number of shipborne data after the

grid filtering became 148858 points. The altimetry-derived data have been filtered on a $3' \times 3'$ grid, and the number of altimetry-derived data after the grid filtering became 70732 points. A smart gross-error detection scheme carried out on the land, shipborne, and altimetry-derived datasets (Abd-Elmotaal and Kühtreiber, 2014) reduced the number of land data to 126202, 148674, and 70589 points, respectively.

References

Abd-Elmotaal, H. and Kühtreiber, N. (2014) Automated Gross Error Detection Technique Applied to the Gravity Database of Africa. General Assembly of the European Geosciences Union (EGU), Vienna, Austria, April 27 – May 2, 2014.

Abd-Elmotaal, H. and Kühtreiber, N. (2017) Optimum Gravity Interpolation Technique for Large Data Gaps: Case Study for Africa. General Assembly of the European Geosciences Union (EGU), Vienna, Austria, April 23 – 28, 2017.

Abd-Elmotaal, H., Seitz, K., Kühtreiber, N. and Heck, B. (2015) Establishment of the Gravity Database AFRGDB_V1.0 for the African Geoid. International Association of Geodesy Symposia Journal, Vol. 144, 131–138, DOI: 10.1007/1345_2015_51.

Abd-Elmotaal, H., Makhloof, A., Abd-Elbaky, M. and Ashry, M. (2017) The African $3'' \times 3''$ DTM and its Validation. International Association of Geodesy Symposia Journal, DOI: 10.1007/1345_2017_19.

Hussein A. Abd-Elmotaal, a Principal Investigator of the project

5. IACS statement on common practices for glacier mapping for inventories

The International Association of Cryospheric Sciences (IACS) of IUGG has issued a statement regarding common practices for glacier mapping for inventories. The statement is prompted by the recent indictment of Dr. Ricardo Villalba (former Director of the Instituto Argentino de Nivología, Glaciología y Ciencias Ambientales, Argentina) related to the application of a lower threshold for generating the Argentinian glacier inventory¹. The statement mentions that “while we do not take any legal or political stand on the issue, we confirm that using a minimum threshold for mapping glaciers is not only common practice worldwide, but necessary to ensure that an object is in fact a glacier (defined by the Argentinian glacier law as any mass of perennial ice that is stable or flows slowly), and not a snowfield or snow patch; a distinction that is difficult to make for very small objects.”

“An IACS Working Group developed and published a Glossary of terms related to glacier mass balance (Cogley et al., 2011) which highlights this difficulty. We observe that the threshold of 0.01 km² adopted by Dr. Villalba is even lower than the one used in inventories in many other glacier regions of the world. For smaller objects, it becomes increasingly difficult to distinguish ‘real’ glaciers from snowfields or snow patches. Resolutions of satellite or airborne images which are typically used to map glaciers also provide constraints on how small the objects to be mapped can be. In summary, the use of a minimum threshold size to map glaciers is scientifically justified and necessary to avoid inclusion of objects that are not glaciers and to complete a glacier inventory in a timely fashion. The Argentinian glacier inventory established under Dr. Villalba’s direction is consistent with the standards adopted in glacier inventories worldwide.”

Regina Hock (USA, IACS President), Ian Allison (Australia, IACS Vice-President), and
Olga Solomina (Russia, IACS Vice-President)

¹ Tollefson, J., and Mega, E.R. (2017). Argentinian geoscientist faces criminal charges over glacier survey. *Nature*, 552, 159 (14 December 2017)

6. Awards and honors

Trevor McDougall (Vice President of IAPSO) was awarded the Companion of the Order of Australia in the General Division for his eminent service to science and to education, particularly in the area of ocean thermodynamics.

Alberto Montanari (former President, IAHS International Commission on Water Resources Systems) was elected President of the European Geosciences Union.

Harald Schuh (President of IAG) was elected a member of the German National Academy of Science and Engineering (acatech).

Stephen Sparks (former President of IAVCEI) was knighted by Queen Elizabeth II for his services to volcanology and geology.

Kathryn Whaler (Vice President of IUGG) was awarded the Order of the British Empire (UK) for her services to geophysics.

Congratulations to Alberto, Harald, Kathy, Steve, and Trevor!

7. Meeting calendar

A calendar of meetings of interest to IUGG disciplines (especially those organized by IUGG Associations) is posted on the IUGG website (<http://www.iugg.org/calendar.php>). Individual Associations also list more meetings on their websites according to their disciplines.

February

- 4-8, AOGS, EGU, Tagaytay, Philippines, New Dimensions for Natural Hazards in Asia: An AOGS-EGU Joint Conference. Web: <http://www.nathazards.org/public.asp?page=home.htm>
- 22-23, CGMW, Paris, France, 2018 CGMW General Assembly. Web: <https://ccgm.org/en/content/7-general-assembly>
- 26 February – 2 March, IAVCEI, Neuquén, Argentina, Geochemical Techniques Applied to Active Volcanoes. Web: <https://citevaunrn.wixsite.com/cursodeposgrado2018>

March

- 4-9, AGU, Cascais, Portugal, Chapman Conference on Particle Dynamics in the Earth's Radiation Belts. Web: <http://chapman.agu.org/particle-dynamics/>
- 18-21, ICA, IGU, ISPRS, IUGG, URSI, Istanbul, Turkey, Gi4DM 2018 GeoInformation for Disaster Management. Web: <http://www.gi4dm2018.org/>
- 18-23, AGU, Puerto de la Cruz, Tenerife, Canary Islands, Spain, Chapman Conference on Stratospheric aerosol in the post-Pinatubo era: Processes, Interactions, and Importance. Web: <http://chapman.agu.org/stratospheric-aerosol/>
- 22-23, IAPSO, IUGG, Jakarta, Indonesia, 2nd IndoOOS Review Workshop. Web: <http://www.clivar.org/news/soliciting-inputs-indian-ocean-observing-system-indoos-review>

April

- 3-6, IAMAS, WCRP, Boulder, CO, USA, Aerosols, Clouds, Precipitation and Climate (ACPS) workshop. Web: TBA
- 8-13, EGU, Vienna, Austria, European Geosciences Union General Assembly 2018. Web: <http://www.egu2018.eu>

- 16-20, IAGA, IUGG, COSPAR, SCOSTEP, Buenos Aires, Argentina, COLAGE XI - Eleventh Latin American Conference on Space Geophysics. Web: <http://www.iafe.uba.ar/colage11>
- 23-26, IAG, Chania, Greece, International Review Workshop on Satellite Altimetry Cal/Val Activities and Applications. Web: <http://www.frm4alt.eu/int-cal-val-review>
- 23-26, IASPEI, IUGG, Al Hoceima, Morocco, Second General Assembly of the African Seismological Commission (AfSC 2018). Web: <https://afsc2018.sciencesconf.org/>
- 24-26, IAMAS, IUGG, SCAR, São José dos Campos-SP, Brazil, 4th International ANGWIN workshop: Exploration of High-latitude Upper Atmosphere Wave Dynamics. Web: <http://www.inpe.br/angwin>

IUGG Electronic Journal Volume 18 Number 2 (1 February 2018)

Editors: Tom Beer, Alik Ismail-Zadeh (Editor-in-Chief), Franz Kuglitsch (Associate Editor), and Kathryn Whaler.

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