



**INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS**  
**UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE**

## **The IUGG Electronic Journal**

**Volume 16 No. 1 (1 January 2016)**

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. Editorial: Highlights 2015**

The year 2015 was remarkable in the IUGG history and in the history of science-policy-society.

1. The 26th IUGG General Assembly was held in Prague, Czech Republic from 22 June to 2 July, bringing together more than 4200 Earth and space scientists from 88 countries. The Scientific Program of the General Assembly consisted of 202 symposia and workshops and 639 sessions in total. Among more than 5300 presentations at the General Assembly were 9 Union lectures, 476 invited presentations, 2682 oral presentations, and 2211 poster presentations. Delegates from 43 IUGG Adhering Bodies attended the Union Council Meeting and approved/elected:

- Regular, Associate, and Affiliate membership (<http://www.iugg.org/members/>).
- Proposed changes to the Statutes and By-Laws (<http://www.iugg.org/statutes/>). Namely, the Adhering Bodies of Member Counties shall appoint Delegates to Council for the period between General Assemblies, so that the Council can vote electronically to make decisions as soon as the need arises. This will make IUGG more vibrant in terms of decision making. Scientists from any country are now eligible to hold various positions within the IUGG family with the following exceptions: positions in the IUGG Executive and the Finance Committees can only be held by scientists from Member Countries. This makes the Union more open to active scientists around the world.

- The Union Strategic Plan for 2016-2023. It will be developed further together with an implementation plan to be approved by the Council in the nearest future.
  - New IUGG and Association Officers (<http://www.iugg.org/administration/>).
  - Official IUGG Liaisons to various intergovernmental and international scientific bodies (<http://www.iugg.org/about/liaisonsreps.php>).
  - The budget for 2016-2019 ([http://www.iugg.org/administration/Budget\\_2016-2019.pdf](http://www.iugg.org/administration/Budget_2016-2019.pdf)).
  - Montréal, Canada as the venue for the 27<sup>th</sup> IUGG General Assembly in 2019.
  - Eight resolutions (<http://www.iugg.org/resolutions/IUGGResolutions2015.pdf>).
2. The Union was involved in various other activities during the last year and showed its strength in international cooperation and science promotion. A few major activities and events in the life of the Union for this year are highlighted below.
- IUGG was involved in the programs of the International Council for Science (ICSU) related to disaster risks, environment, health and well-being, and scientific data. Particularly, IUGG contributed to the ICSU's synthesis paper on disaster risk reduction ([http://www.icsu.org/science-for-policy/disaster-risk/documents/DRRsynthesisPaper\\_2015.pdf](http://www.icsu.org/science-for-policy/disaster-risk/documents/DRRsynthesisPaper_2015.pdf)).
  - IUGG continued to strengthen cooperation with the Scientific Unions and interdisciplinary bodies of the ICSU such as the World Data System Committee and CODATA, as well as with the World Meteorological Organization (WMO), the United Nations Education, Science and Culture Organization (UNESCO), the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Global Framework for Climate Services (GFCS), the Group on Earth Observations (GEO), the World Climate Research Programme (WCRP), the Integrated Research on Disaster Risk (IRDR) Programme, and with some other international and intergovernmental organizations and professional geosciences societies.
  - IUGG and the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy, signed an agreement to continue their cooperation in geophysical and geodetic education and science collaboration for 2016-2019.
  - IUGG co-sponsored seven geoscience education events in 2015.
  - IUGG organized together with ICTP a conference "Future Earth and Space Science and Education" (2-6 November, Trieste, Italy), where representatives of ICSU GeoUnions and interdisciplinary bodies presented their views on future science and science education. Leaders of GeoUnions met on 6-7 November to discuss joint activities.
  - Sir Brian J. Hoskins (UK) received the Gold Medal ([http://iugg.org/publications/special/IUGG\\_GOLD\\_MEDAL\\_Announcement.pdf](http://iugg.org/publications/special/IUGG_GOLD_MEDAL_Announcement.pdf)). 74 distinguished members of the Union were elected/confirmed as IUGG Fellows ([http://www.iugg.org/honors/fs\\_fellows.php](http://www.iugg.org/honors/fs_fellows.php)). Ten researchers received the IUGG Early Career Scientist Award ([http://www.iugg.org/honors/ecs\\_awardees.php](http://www.iugg.org/honors/ecs_awardees.php)).
  - A Union Commission on Planetary Sciences (<http://www.iugg.org/about/commissions/ucps.php>) was launched.
  - The IUGG Bureau and Executive Committee met in Vienna in April and in Prague in June and July to discuss Union activities.
3. Finally, the year 2015 was a year of three major gatherings of scientists and policy makers to adopt action plans on disaster risk reduction, sustainable development, and climate change.
- *The United Nations World Conference on Disaster Risk Reduction (WCDRR)* held in Sendai, Japan, from 14 to 18 March 2015. On the occasion of the WCDRR, ICSU and the International Social Sciences Council (ISSC) released a synthesis paper "Disaster risks research and assessment to promote risk reduction and management", which aims to highlight potential contributions of science to disaster risk reduction (<http://www.icsu.org/news-centre/news/disaster-risks-research-and-assessment-to-promote-risk-reduction-and-management>). A summa-

ry for policymakers of the synthesis paper was distributed among the WCDRR National Delegates. Representatives from 187 UN member States adopted the major agreement of the Post-2015 development agenda, *the Sendai Framework for Disaster Risk Reduction 2015-2030 – the new international framework for disaster risk reduction*, a far reaching new framework for disaster risk reduction with seven targets and four priorities for action. IUGG together with other international and intergovernmental organizations signed the Sendai Partnerships 2015-2025 for Global Promotion of Understanding and Reducing Landslide Disaster Risk ([http://www.iugg.org/about/Combined\\_Sendai\\_Partnerships.pdf](http://www.iugg.org/about/Combined_Sendai_Partnerships.pdf)).

- The Heads of State and Government and High Representatives, meeting at the United Nations Headquarters in New York from 25 to 27 September, decided on *17 Global Sustainable Development Goals*. Among the goals are several directly related to the activities of IUGG, namely, “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (goal 4), “ensure availability and sustainable management of water and sanitation for all” (goal 6), “make cities and human settlements inclusive, safe, resilient and sustainable” (goal 11), “take urgent action to combat climate change and its impacts” (goal 13), “conserve and sustainably use the oceans, seas and marine resources for sustainable development” (goal 14), and “strengthen the means of implementation and revitalize the global partnership for sustainable development” (goal 17).
- The Heads of State and Government and High Representatives of 195 countries, meeting at the *United Nations Conference on Climate Change* in Paris from 30 November to 12 December, adopted the first universal climate agreement to strengthen the global response to the threat of climate change including by “holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change, and by increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production”. Many IUGG experts contributed scientifically to the event.

Alik Ismail-Zadeh, IUGG Secretary General



***The IUGG  
Secretariat thanks the Adhering  
Bodies and National Committees,  
Union Associations and Union  
Commissions as well as all  
individuals who helped make the  
year 2015 exciting and productive  
and who contributed to  
strengthening international  
scientific cooperation in Earth  
and space sciences for the benefit  
of society.***

***Best wishes for the year 2016!***

***Meilleurs Vœux pour l'Année 2016!***

## **2. Union membership and financial situation**

As of 1 January 2016, IUGG has 69 National Members including 59 countries in paying status. The paying members are placed in categories from 1 to 14 depending on their financial contribution to the Union (the membership dues raise with increasing category number). At present the highest category used is category 11. The members pay dues according to a number of units assigned to their category (in category 1 the number of units is 1, and in category 11 the number is 35).

According to a decision of the XXII IUGG General Assembly (Boulder, USA, 1995) the price of 1 unit is determined every year using an inflator index obtained from the Bureau of Labor Statistics, U.S. Department of Labor. In 2016, the price of 1 unit is unchanged compared with 2015 and will be US \$1,905. The 59 paying members represent a total of 276 units, which is equivalent to a total income of US\$ 525,780.

The funds received as dues are the basis for IUGG's operation as a scientific union, although Union associations may have their own funds earned via book selling or donations. The funds are spent to support (i) international scientific programs, projects and services, (ii) general and scientific assemblies, symposia, workshops, and schools; (iii) travel of students, early career scientists, and scientists from developing countries to attend scientific meetings; (iv) scientific activities of Union Associations and Commissions, (v) the International Lithosphere Program, (vi) the International Council for Science, and (vii) administration and management.

Aksel Hansen, IUGG Treasurer

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## **3. Yearbook 2016**

IUGG Yearbook 2016 is now electronically available in PDF format at the IUGG web site (<http://www.iugg.org/publications/yearbooks/yearbook2016.pdf>). Thanks to all of the National Committees and the Associations for helping to update the information in the IUGG Yearbook! During 2016, updates on addresses and other information in the Yearbook should be sent to the IUGG Secretariat ([secretariat@iugg.org](mailto:secretariat@iugg.org)) as soon as they are known. Our aim is to update the Yearbook as needed throughout the year. Yearbook 2016 will be published together with the 2015 Annual Report and sent to the National Members in May 2016.

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## **4. IUGG and ICTP agree to continue cooperation in geoscience education**

The International Union of Geodesy and Geophysics (IUGG) and the Abdus Salam International Centre for Theoretical Physics (ICTP) will continue cooperation in geosciences education. On 6 November 2015, ICTP Director Fernando Quevedo and IUGG President Michael Sideris signed a Memorandum of Understanding to promote educational programs related to geodesy and geophysics for 2016-2019. The agreement encourages collaboration in the organization of advanced schools/workshops in geodesy and geophysics in ICTP or in economically less developed countries.

Founded in 1964 by the late Nobel Laureate Abdus Salam and co-sponsored by UNESCO, IAEA, and the Italian government, the Abdus Salam International Centre for Theoretical Physics - ICTP (<http://www.ictp.it>) seeks to accomplish its mandate by providing scientists from developing countries with the continuing education and skills that they need to enjoy long and productive careers. ICTP has been a major force in stemming the scientific brain drain from the developing world. The impact of ICTP extends well beyond the Centre's facilities to virtually every corner of the Earth. The Earth System Physics (ESP) Section of ICTP studies a wide spectrum of the Earth system, from its fluid

components (oceans and the atmosphere) to the planet's interior. In 2011 IUGG and ICTP agreed to enhance geophysical and geodetic education and science collaboration and signed the first Memorandum of Understanding to promote educational programs related to geodesy and geophysics for 2012-2015.



*IUGG President M. Sideris (left) and ICTP Director F. Quevedo after the MoU signing*

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## **5. IUGG grants to support geoscience education events in 2016**

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 2016 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:

- 15 - 19 February (Sao Paulo, Brazil), Advanced School on Regional Climate Modeling over South America
- 23 May - 3 June (Trieste, Italy), Eighth ICTP Workshop on the Theory and Use of Regional Climate Models
- 27 June - 1 July (Trieste, Italy), Earth System Physics: Summer School on Aerosol-Cloud Interactions
- 18 - 29 July (Pune, India), Earth System Modelling School
- 24 - 28 October (Trieste, Italy), School on Recent Advances in Analysis of Multivariate Ecological Data: Theory and Practice
- 7 - 11 November (Costa Rica), Second Workshop on Climate Change, Variability and Modeling over Central America and Mexico

## 6. IACS Early Career Scientist Prize 2016

The Early Career Scientist Prize of the International Association of Cryospheric Sciences (IACS) of IUGG is an annual prize (EUR 1000) awarded to a nominated early career scientist, who is assessed as having published the best scientific paper on a cryospheric subject during the previous calendar year in a peer-reviewed international journal.

The objective of the prize is to recognize excellence in cryospheric science by honoring and promoting someone in the early stages of her/his career, and to draw attention to IACS activities. The Selection Committee will announce the winner in March next year. The 2016 Prize will be presented at an IACS affiliated conference. Nominations should be submitted to [ecsprize@cryosphericosciences.org](mailto:ecsprize@cryosphericosciences.org) not later than 12 February 2016. For the full guidelines, please visit the IACS webpage at: <http://www.cryosphericosciences.org>.

Charles Fierz, IACS President

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## 7. Report on the ILP Conference “Celebrating Excellence in Solid Earth Sciences”

The International Lithosphere Program (ILP) seeks to elucidate the nature, dynamics, origin and evolution of the lithosphere through international, multidisciplinary geoscience research projects and coordinating committees. The ILP is charged with promoting multidisciplinary research projects of interest to both the geological (International Union of Geological Sciences - IUGS) and geophysical (IUGG) communities.

The ILP Conference “Celebrating Excellence in Solid Earth Sciences” was held in Potsdam, Germany, from 21-23 September 2015 to celebrate the ILP’s 35th birthday. Together with more than 50 scientists, members of the ILP Task Forces and Coordinating Committees, the ILP Bureau and ILP’s office gathered together to discuss the research findings, science plans, and new projects. Hans Thybo, President of the European Geosciences Unions (EGU), Harsh Gupta, IUGG Immediate Past President, and Roland Oberhänsli, IUGS President, delivered keynote lectures at the conference.



*Conference group photo*

The ILP Bureau held a meeting on the occasion of the conference. Eight of ten proposals for ILP Task Forces were accepted by the Bureau. The Bureau nominated Hans Thybo as the next ILP President to take office from 2017, and Alessandro Tibaldi as New Chair of National Representatives to succeed Victoria Pease. The IUGG and IUGS should approve the nominations.

M. Scheck-Wenderoth, ILP Secretary General & A. Rudloff, ILP Executive Secretary

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## **8. News from the International Council for Science (ICSU)**

### ***The International Council for Science on climate change***

For more than 60 years, the International Council for Science has played a leading role in facilitating international research programs on climate change, and in informing policymaking by providing scientific evidence. A brochure (<http://www.icsu.org/publications/about-icsu/the-international-council-for-science-and-climate-change-2015/the-international-council-for-science-and-climate-change-2015>) provides an overview of the history of the Council's involvement. Since the 1950s, the International Council for Science (ICSU) has played a pioneering role in the development of climate science at the international level, principally by generating mechanisms to orient and complement research undertaken at the national level. In recent decades, climate science has required international collaboration among researchers on an unprecedented scale, coupled with collaboration at the intergovernmental level. ICSU's contribution has been crucial to defining the scientific issues, facilitating consensus on research priorities and convening collaborations which have underpinned the research. In parallel, ICSU has also worked tirelessly to initiate and support mechanisms for ground-breaking climate research to reach policy-makers, in some cases resulting in important shifts in policy development.

### ***Celebrating the International Geosphere-Biosphere Programme (IGBP)***

The International Geosphere-Biosphere Programme (IGBP) closed down with a series of celebrations held at the American Geophysical Union (AGU) Fall Meeting in San Francisco (USA) from 14 to 18 December. After three decades of fostering international collaborative research and synthesis on global change, the scientific projects and networks under IGBP will transition into Future Earth. ICSU, as sole sponsor of IGBP, will serve as the repository of the historical archives of the programme, and continue to maintain the server for the website for the next ten years.

### ***Leading science groups urge global accord on open data in a big data world***

Science International 2015 launched a campaign for "Open Data in a Big Data World" at Science Forum South Africa in Pretoria. Four major international science organizations – ICSU, the InterAcademy Partnership (IAP), The World Academy of Sciences (TWAS), and the International Social Science Council (ISSC) – called for global endorsement of an accord to help assure open access to volumes of "big data" that increasingly are the basis of research and policymaking.

These organizations have developed and support an accord (<http://www.icsu.org/science-international/accord>) that includes a set of guiding principles on open access to big data, necessary to protect the scientific process and assure that developing countries can participate more fully in the global research enterprise. Limits on access to big data knowledge, they warn, raises the risk that progress will slow in areas such as advanced health research, environmental protection, food production and development of smart cities.

Source: ICSU website

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## 9. IUGG Conference on Mathematical Geophysics 2016

The 31st IUGG Conference on Mathematical Geophysics (CMG) “Geophysics, from Mathematics to Experiments” is to be held at the Institut Henri Poincare (Paris, France) during 6-10 June 2016. Biennial conferences on mathematical geophysics held in many countries of the world cover a wide spectrum of current research topics in Geophysics. The conference aims to draw together key contemporary issues in mathematical geophysics, including solid Earth, ocean, atmosphere, cryosphere, climate observations and data assimilation; modeling of the Earth system and its components; model validation and solving contemporary earth science problems. In addition to the traditional focus on theoretical and modeling works, the CMG2016 will also emphasize experimental works - in particular conceptual experiments that address physical mechanisms and scaling laws. Deadline for abstract submission is 15 January 2016. For more information: <http://cmg2016.sciencesconf.org/>

The Conference Organizing Committee / IUGG CMG

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## 10. 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.

### *January*

- 27-29, UNISDR, Geneva, Switzerland, Science and Technology Conference on the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030. Web: <http://www.unisdr.org/partners/academia-research/conference/2016/>

### *February*

- 8-12, IAG, Sydney, Australia, IGS Workshop. Web: <http://kb.igs.org/hc/en-us/articles/205944657-IGS-Workshop-2016-Information>
- 14-20, IACS, IUGG, Preda/Davos, Switzerland, Snow Science Winter School. Web: [http://www.slf.ch/dienstleistungen/events/snowschooll/index\\_DE](http://www.slf.ch/dienstleistungen/events/snowschooll/index_DE)
- 16-19, IAMAS, IUGG, Berlin, Germany, SPARC workshop on “Stratospheric Change and its Role for Climate prediction (SHARP)”. Web: <http://www.sparc-climate.org/news/news/news/2015/09/17/1st-announcement-on-sparc-workshop-on-stratospheric-change-and-its-role-in-climate-prediction-shar/>
- 21-25, AGU, Ixtapa, Guerrero, Mexico, Chapman Conference on the Slow Slip Phenomena. Web: <http://chapman.agu.org/slowslip/>
- 21-26, AGU, New Orleans, LA, USA, 2016 Ocean Sciences Meeting. Web: <http://osm.agu.org/2016/>

### *March*

- 2-4, ICSU, WMO, UNESCO, Amsterdam, The Netherlands, Global Climate Observation. The Road to the Future. Web: <http://www.gcos-science.org/>
- 9-12, IAG, Hartebeesthoek Radio Astronomy, South Africa, 2nd IVS Training School on VLBI for Geodesy and Astrometry. Web: [http://www.evga.org/2nd\\_vlbi\\_school.html](http://www.evga.org/2nd_vlbi_school.html)
- 9-19, IAG, WDS, Johannesburg, South Africa, 9th IVS General Meeting. Web: <http://events.saip.org.za/conferenceDisplay.py?confId=56>

- 13-23, IAVCEI, IUGG, Yaoundé, Cameroon, 9th Workshop of the IAVCEI Commission on Volcanic Lakes (CVL9). Web: [http://www.satrebs.u-tokai.ac.jp/activity/2015/CVL9\\_Cameroon\\_2nd\\_circular\\_.pdf](http://www.satrebs.u-tokai.ac.jp/activity/2015/CVL9_Cameroon_2nd_circular_.pdf)
  - 20-24, IAGA, IUGG, Hurghada, Egypt, IAGA-IV Symposium: “Influence of short and long term solar variability on climate”. Web: <http://iaga.cu.edu.eg/>
  - 30 March – 1 April, IAG, Vienna, Austria, 3rd Joint International Symposium on Deformation Monitoring (JISDM). Web: <http://www.jisd2016.org/>
  - 30 March – 1 April, IAPSO, IUGG, Lerici, Italy, 2016 Arctic-Subarctic Ocean Fluxes (ASOF). Web: <http://asof.npolar.no/>
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*End of IUGG Electronic Journal Volume 16 Number 1 (1 January 2016)*

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