



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

## **The IUGG Electronic Journal**

**Volume 14 No. 2 (1 February 2014)**

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 becomes a Participating Organization of GEO**

The Group on Earth Observations (GEO) is coordinating efforts to build a Global Earth Observation System of Systems (GEOSS). GEO was launched in response to calls for action by the 2002 World Summit on Sustainable Development and by the G8 (Group of Eight) leading industrialized countries. These high-level meetings recognized that international collaboration is essential for exploiting the growing potential of Earth observations to support decision making in an increasingly complex and environmentally stressed world. GEO is a voluntary partnership of governments and international organizations. It provides a framework for developing new projects and coordinating strategies and investments among partners. As of 2014, GEO's Members include 90 Governments, the European Commission, and 77 intergovernmental, international, and regional Participating Organizations with a mandate in Earth observation or related issues.

The GEO-X Plenary and the Geneva Ministerial were held from 12 to 17 January 2014 in Geneva, Switzerland. At the first session of the Geo-X Plenary, the International Union of Geodesy and Geophysics (IUGG) was unanimously recognized as a new Participating Organization of GEO. Three IUGG bodies were already Participating Organizations in GEO: the International Association of Geodesy (IAG); FDSN Commission of the International Association of Seismology and Physics of the Earth's Interior (IASPEI); and International Ozone Commission of the International Association of Meteorology and Atmospheric Sciences (IAMAS). For the last years GEO expanded its Societal Benefit Areas of Interests including Climate, Disasters, Water and Weather.

At the Geneva Ministerial on 17 January, GEO received unanimous endorsement to unleash the power of open data for a second decade (2015-2025). There was agreement to continue building on the organization's first 10 years of pioneering environmental advances, which are designed to improve the quality of life of people everywhere. Fueled by open data, GEO's efforts are now evident in most regions of the world.

## 2. Website updated



The IUGG website was updated to include new sections as well as to simplify the existing sections, and to provide basic information and links on the activities of Union Associations. Namely, it contains new and reshaped sections:

- Union and Association Honors and Recognition Programs (<http://www.iugg.org/honors/>);
- Association Meeting Calendars ([http://www.iugg.org/meetings/a\\_meetings.php](http://www.iugg.org/meetings/a_meetings.php));
- Association Programs on Education and Capacity Building ([http://www.iugg.org/education/a\\_programs.php](http://www.iugg.org/education/a_programs.php));
- Activities related to Early Career Scientists (<http://www.iugg.org/youngscientists/>);
- Research Programmes (<http://www.iugg.org/programmes/>);
- Grants Program (<http://www.iugg.org/programmes/grants.php>);
- Publications (<http://www.iugg.org/publications/>);
- Young Scientists (<http://www.iugg.org/youngscientists/>)

The website of the 26<sup>th</sup> IUGG General Assembly in Prague as well as the IUGG Facebook are now linked to the Union website.

Received from Dmitry Krupsky, IUGG web-master

## 3. Grants Programme: Deadline for application is 1 April

IUGG continues its Grants Programme for 2012-2015. Key priority areas are defined for the Grants Programme in line with IUGG overall scientific strategies: (i) creation of new knowledge in Earth and space sciences; (ii) dissemination of knowledge, data and information on geophysics and geodesy; (iii) geoscience for sustainable development; (iv) geoscience and policy interface; and (v) geoscience education and outreach in developing countries. Proposals of high quality related to the priority areas will be funded for a fixed term of one or two years. The IUGG Grants Programme aims to support projects of importance to the international geophysical and geodetic community, which explore new scientific ideas and develop future international initiatives. A typical proposal

may be for a workshop or a meeting of experts from several disciplines to develop a specific scientific programme or assessment, particularly addressing an enhancement of geophysical research and Earth science education in underdeveloped and developing countries. Although the range of activities supported is broad, the project proposals should be of scientific and societal importance, and their results are expected to provide clear recommendations to politicians and other decision makers at national and local levels and to the general public in terms of the urgent actions to be undertaken.

The deadline for the electronic submission of project proposals for the IUGG Grants Programme is **1 April 2014**. *Proposals can be submitted by IUGG Associations and/or Union Commissions only*. The guidelines for proposal submission can be found on the IUGG web site (<http://www.iugg.org/programmes/grants2015.php>).

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#### **4. Report on the ICSU GeoUnions meeting**

The GeoUnions (GUs) is a network of representatives of 8 international scientific unions of the International Council for Sciences (ICSU) dealing with Earth and space sciences. The GUs established a Steering Committee in 2004 to promote the sciences worldwide, to communicate and to coordinate scientific activities of individual unions, and to speak on behalf of GUs members to ICSU Executive Board, ICSU Members and its interdisciplinary bodies and at international level, especially to the United Nations organizations and other global stakeholders.

At the GUs meeting in Paris, France (28 April 2013), GUs representatives accepted an invitation by Orhan Altan (First Vice President of the International Society for Photogrammetry and Remote Sensing, ISPRS) to hold an “extraordinary” meeting in Antalya, Turkey (16-18 November 2013) in conjunction with the ISPRS scientific conference. Representatives of 6 Unions participated at the meeting of the Steering Committee of GUs in Antalya. Ron Ablor (Past President of the International Geographical Union) chaired the Steering Committee. Alik Ismail-Zadeh represented IUGG at the GUs meeting.

The members of the Steering Committee provided updates on the activities of the unions for the last six months and discussed the issues related to the forthcoming General Assembly of ICSU to be held in Auckland, New Zealand (31 August - 3 September 2014). Among the meeting agenda topics were joint GUs projects/initiatives related to the Future Earth Scientific Program, disaster risk assessment and management, the International Year of Global Understanding (IYGU), and some others. Particularly, the Steering Committee considered the proposal of the International Union of Geological Sciences (IUGS) on Resourcing Future Generations and the ISPRS proposal on Global Land Cover Information, discussed the IUGG initiative on building actions toward setting up a high-level intergovernmental body to assess disaster risk, and the ISPRS initiative on Application of Geoinformation to Enhance Disaster and Risk Management. Also GUs considered and approved the working procedures of the Steering Committee and agreed to launch the GUs web page: <http://www.icsu-geounions.org>.

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#### **5. Report on the HYDRO ECO 2013 Conference**

The last decade has been characterized by a growing number of studies at the interface between hydrology and ecology. The interest in coupling hydrological and ecological studies has been

triggered by purely scientific questions related to the quantification of the role of interactions between hydrological and biological processes on surface and groundwater resources and quality, but also by the importance of these physical and biological interactions at small, local and regional scales. These scales are of paramount importance for applied environmental issues related to air and water quality or biodiversity dynamics. The first HYDRO ECO conference was held in Karlovy Vary, Czech Republic, in 2006, the second and third conferences in Vienna, Austria, in 2009 and 2011.

The fourth HYDRO ECO Conference was held in the University of Rennes 1, Rennes, France, 13-16 May 2013. The principal objectives of the fourth conference was (i) to present new findings and approaches on interactions between hydrology and ecology; (ii) to promote interdisciplinary interactions on water related issues between hydrology, hydrogeology, biogeochemistry, microbial ecology, and ecology; (iii) to explore emerging patterns, breakthroughs and challenges; and (iv) to provide management applications and guidelines to tackle environmental issues. The conference brought together more than 200 experts from 44 different countries from the 5 continents with different disciplines such as hydrologists (groundwater, surface water), ecologists, biologists, subsurface microbiologists, environmental biogeochemists, ecotechnologists, geomorphologists, hydraulic engineers, forest managers, nature reserve managers, regional and landscape planners. During four conference days, 11 sessions were organized with 7 plenary talks, 84 oral and 73 poster presentations. The IUGG financial support allowed more scientists to attend the conference by reducing their travel expenses, especially for those coming from Argentina, Botswana, Colombia, Egypt, Iraq, Mongolia, Tanzania, and Tunisia. The conference participants presented and discussed many research topics including:

- three-dimensional nature of water fluxes in gaining and losing river reaches to consider the relative importance of hyporheic exchange flows, bank seepage and links to regional groundwater for nutrient supply and processing;
- groundwater - surface water interactions and their potential influence on biogeochemical transformations with the use of controlled laboratory and field experiments;
- combination of hydrological measurements and modeling tools with measurements of biogeochemical transformations to understand (i) the spatial variation in biogeochemical hotspots, and (ii) the controls on respiration and macro-invertebrate assemblages along hyporheic exchange flows at the reach and patch scales;
- understanding on how biogeochemical processes scale in landscapes and drainage basins using mathematical frameworks, modeling approaches, and empirical tools;
- discrepancy between space and time scales of observation and space and time characteristics of main hydro-ecological processes; and
- development of climate change scenarios using integrated system analyses, ecosystem services, risk, uncertainty, and ecosystem function.

The hydro-ecology scientific community has reached the maturity to become one of the key providers of sound science-based solutions to maintain and promote the restoration of aquatic and terrestrial ecosystem functions under global change uncertainties. The next conferences will be held in Vienna, Austria, in 2015 and in Birmingham, UK, in 2017.

Received from Gilles Pinay, Conference organizer

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## 6. MPE2013 moves into Mathematics of Planet Earth

The international project “Mathematics of Planet Earth 2013” (MPE2013) continues as “Mathematics of Planet Earth” (MPE). The objectives remain unchanged: (i) to identify fundamental research questions about Planet Earth and (ii) to reach out to the general public.



“Mathematics of Planet Earth 2013 has been a great start and the level of cooperation demonstrated by MPE2013 is unprecedented,” said Christiane Rousseau, Vice-President of the International Mathematics Union, and continued: “But identifying the research problems is not enough. Mathematics moves slowly, the planetary problems are very challenging, and we cannot expect great results in just one year.” According to Irina Bokova, Director-General of UNESCO, “The Mathematics of Planet Earth initiative resonates strongly with UNESCO’s work to promote the sciences and science education, especially through our International Basic Sciences Programme. Mathematics advances fundamental research and plays an important role in our daily lives. More than ever we need to develop relevant learning materials and to spark in every student, especially girls, a sense of joy in the wondrous universe of mathematics and the immense potential unleashed by this discipline. In this spirit, we commend this initiative and fully endorse the proposal to continue this programme beyond 2013.”

MPE2013 brought together over 140 scientific societies, universities, research institutes, and foundations from around the world to research fundamental questions about Planet Earth, nurture a better understanding of global issues, and help inform the public about the essential mathematics of the challenges facing our planet. MPE2013 activities have included more than 15 long-term programs at mathematical research institutes all over the world, 60 workshops, dozens of special sessions at society meetings, public lecture series, summer and winter schools for graduate students, research experiences for undergraduates, and an open-source MPE exhibition. In addition, MPE2013 has supported the development of high-quality curriculum materials for all ages and grades. “Mathematics of Planet Earth 2013 highlighted again the importance of international multidisciplinary cooperation and stimulated mathematicians and geoscientists to work together to uncover Earth’s mysteries”, said Alik Ismail-Zadeh, a mathematical geophysicist and IUGG Secretary General. IUGG was a Partner Organization of MPE2013 and will continue the cooperation with MPE in future. More information on the MPE can be found at: <http://www.iugg.org/special/mpe2013.pdf>.

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## 7. IUGG Union Commission on Climate and Environmental Change (CCEC) meeting

The Inaugural meeting of CCEC will be held in Beijing, China, 11-12 April 2014. It will consist of a business meeting and workshop to discuss the following topics: (i) To strengthen internal IUGG linkages; (ii) to examine how CCEC can link in to Future Earth; (iii) to further investigate linkages outside of IUGG; and (iv) to plan for the XXVI IUGG General Assembly in Prague in 2015. Interested persons should contact Tom Beer, Chair of CCEC.

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## 8. IUGG-related meetings occurring during February – April

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>). Specific information about these meetings can be found there. Individual Associations also list more meetings on their websites according to their disciplines.

### *February*

- 10-13, WCRP, WMO, College Park, MD, USA, International Conference on Subseasonal to Seasonal Prediction. Web: <http://www.emc.ncep.noaa.gov/gmb/ens/s2s/>
- 11-13, CliC, Frascati, Italy, Permafrost 2014.  
Web: <http://www.climate-cryosphere.org/meetings/duo-permafrost-2014>
- 24-27, CODATA, San Francisco, USA, 9th International Digital Curation Conference.  
Web: <http://www.dcc.ac.uk/events/idcc14>
- 24-28, UNESCO-IOC, Tianjin, China, ODINWESTPAC Regional Workshop. Web: [http://ioc-unesco.org/index.php?option=com\\_oe&task=viewEventRecord&eventID=1381](http://ioc-unesco.org/index.php?option=com_oe&task=viewEventRecord&eventID=1381)

### *March*

- 2-7, IAG, IVS, IAU, ICSU, Shanghai, China, 8th IVS General Meeting.  
Web: <http://ivs2014.csp.escience.cn/dct/page/1>
- 9-14, IACS, Davos, Switzerland, Intercomparison of Snow Grain Size Measurements Workshop. Web: [http://www.wsl.ch/dienstleistungen/veranstaltungen/veranstaltungskalender/Snow\\_Grain/index\\_EN](http://www.wsl.ch/dienstleistungen/veranstaltungen/veranstaltungskalender/Snow_Grain/index_EN)
- 10-14, International Glaciological Society, Hobart, Australia, International Symposium on Sea Ice in a Changing Environment. Web: <http://seaice.acecrc.org.au/igs2014/>
- 17-21, WCRP, Montevideo, Uruguay, WCRP Conference for Latin America and the Caribbean. Web: <http://www.cima.fcen.uba.ar/WCRP/>
- 19-21, ICSU, Berlin, Germany, 2nd Global Land Project Open Science Meeting.  
Web: <http://www.glp-osm2014.org/>

### *April*

- 7-12, SCAR, Helsinki, Finland, Arctic Science Summit Week (ASSW).  
Web: <http://www.assw2014.fi/>
- 8-10, IUGG, IAMAS, Laurel, MD, USA, 3rd "Titan through time" ICPAE-workshop.  
Web: <https://dnnpro.outr.jhuapl.edu/titanthroughtime3/Home.aspx>
- 11-12, IUGG, CCEC, Beijing, China, CCEC workshop on Adapting to Earth System Change
- 22-25, UNESCO-IOC, Nha Trang, Vietnam, WESTPAC 9th International Scientific Symposium. Web: <http://www.vnio.org.vn/Default.aspx?alias=www.vnio.org.vn/9thwestpacsymp>
- 27 - 2 May, EGU, Vienna, Austria, European Geosciences Union General Assembly.  
Web: <http://www.egu2014.eu/>

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Editor: Alik Ismail-Zadeh, Secretary General (Alik.Ismail-Zadeh@kit.edu)

Associate Editor: Franz Kuglitsch, Executive Secretary / Assistant Secretary General (fgkugl@gfz-potsdam.de)

**Note: Contributions to IUGG E-Journal are welcome from members of the IUGG family. Please send your contributions to Alik Ismail-Zadeh by e-mail (insert in Subject line: *contribution to E-Journal*). The contributions will be reviewed and may be shortened.**