



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

## **The IUGG Electronic Journal**

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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. Scientific meetings selected for IUGG support in 2014**

IUGG co-sponsors symposia and workshops appropriate to our disciplines of study. IUGG allocated US\$30,000 to support scientific meetings in 2014. Officers of the Associations proposed meetings to receive these awards. In 2014, IUGG will support the following meetings (the IUGG Associations/Union Commissions endorsing the meetings are indicated in brackets):

1. Joint model-data workshop for the Late Pleistocene evolution of the Greenland and Antarctic ice sheets, Grenoble, France, 22-24 May (IACS)
2. School on Reference Systems - Escuela en Sistemas de Referencia and Symposium on Geocentric Reference System for the Americas (SIRGAS), Santa Cruz, Bolivia, 22 September-1 October (IAG)
3. 22nd International Workshop on Electromagnetic Induction in the Earth, Weimar, Germany, 24-30 August (IAGA)
4. Geospace revisited: Understanding dynamic processes with new spacecraft and ground-based observations, Rhodes, Greece, 15-20 September (IAGA)
5. 16th IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing, 2014, Hyderabad, India, 7-16 October (IAGA)
6. Evolving Water Resources Systems - Understanding, Predicting and Managing Water - Society Interactions, Bologna, Italy, 4-6 June (IAHS)
7. 12th Kovacs Colloquium, Paris, France, 21 June (IAHS)

8. 13th Quadrennial iCACGP Symposium and 13th IGAC Science Conference on Atmospheric Chemistry, Natal, Brazil, 22-26 September (IAMAS)
  9. 3rd "Titan through time" ICPAE-workshop, Laurel, MD, USA, 8-10 April (IAMAS)
  10. Regional Assembly - Latin American and Caribbean Seismological Commission (LACSC-2014), Bogota, Colombia, 23-27 July (IASPEI)
  11. Mega earthquakes and tsunamis in subduction-zones: forecasting approaches and implications for hazard assessment, Rhodes, Greece, early October (IASPEI)
  12. 5th International High Energy Particle Precipitation in the Atmosphere (HEPPA) Workshop, Baden-Baden, Germany, 5-9 May (IAGA, IAMAS)
  13. Special Symposium - Four paradigms in predicting extremes: Legacy of Vladimir I. Keilis-Borok, Merida, Yucatan, Mexico, 2-4 June (IASPEI, CMG)
  14. GEORISK 2014: Improving Geophysical Risk Assessment, Forecasting, and Management, Madrid, Spain, 18-21 November (IAVCEI, GRC)
  15. 40th COSPAR Scientific Assembly, Moscow, Russia, 2-10 August (IAMAS, IAGA, IAG)
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## **2. Business Meeting of the Austrian National Committee for IUGG**

The business meeting of the Austrian National Committee for IUGG (ÖNK-IUGG) was held on 30 September 2013 at the Central Institute for Meteorology and Geodynamics (ZAMG). Austrian representatives of six IUGG Associations reported about their work and presented their recent and planned activities. The cooperation between the different IUGG Associations in Austria was discussed. Harald Schuh terminated his term as President of the Austrian National Committee for IUGG, and Wolfgang Lenhardt was elected President. Dr. Lenhardt (born in 1957, Vienna, Austria) studied geophysics at the University of Vienna, where he received his PhD in 1983. From 1985 until 1991 he worked in South Africa in the gold mining industry, where he was in charge of the seismic network for detecting and analyzing rock bursts. In 1991 he returned to Austria and joined the ZAMG. Since 2009 he is in charge of the Department of Geophysics of the ZAMG. He is lecturer at the Montanuniversität Leoben (MUL) in Austria, holds several positions in international seismological organizations and has published numerous papers on induced and natural seismicity.

Received from Norbert Höggerl, Secretary of the ÖNK-IUGG

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

### ***Future Earth Program***

Future Earth has published the final report of the Transition Team, the group of experts that led the initial design of the research initiative on global sustainability. The team comprised seventeen members from a wide range of disciplines and countries, and also included ex-officio members representing the main partners of the Science and Technology Alliance for Global Sustainability (<http://stalliance.org/>). Co-chaired by Johan Rockström and Diana Liverman, the team proposed a vision for integrated and solutions-oriented research that can support a transformation towards global sustainability over the coming decade. The report sets out the initial design of Future Earth (<http://www.icsu.org/future-earth>), comprising a research framework and governance structure, preliminary reflections on communication and engagement, capacity-building and education strategies, and implementation guidelines.

Structuring the research agenda around three central themes – dynamic planet; global development; transformations towards sustainability – the report details the key research questions that will be addressed in each area. At its core lies a new partnership between science and society to co-design research priorities and co-produce knowledge. To ensure that the research conducted under the umbrella of Future Earth is actionable, relevant to stakeholders and done to the highest scientific standards, the team also designed a unique governance structure for the initiative. Led by a multi-stakeholder Governing Council, the ultimate decision-making body, Future Earth's direction will be guided by a Science Committee and an Engagement Committee. The Science Committee will provide scientific guidance, ensure scientific quality and guide the development of new projects. The Engagement Committee will provide leadership and strategic guidance on involving stakeholders throughout the entire research process from co-design to dissemination, ensuring that Future Earth produces the knowledge that society needs. The recommendations of this report are now being taken forward by the Future Earth interim secretariat, and the full initiative is expected to be up and running by the end of 2014. The full report is available at: [http://www.icsu.org/news-centre/future-earth/media-centre/relevant\\_publications/future-earth-initial-design-report](http://www.icsu.org/news-centre/future-earth/media-centre/relevant_publications/future-earth-initial-design-report)

### ***ICSU GeoUnions launch new website***

The GeoUnions is a network of representatives of the eight international scientific unions of ICSU dealing with Earth and space sciences. At the recent meeting of the GeoUnions Steering Committee (Antalya, Turkey, 16-18 November 2013), it was agreed to develop a website of the GeoUnions to inform scientific community about joint activities of the unions. A new website is now launched: <http://icsu-geounions.org/>. The network's aim is to promote sciences worldwide, to communicate and to coordinate scientific activities of individual unions. Current key areas of the network's activities are: (i) Extreme Natural Hazards and Societal Implications (ENHANS), (ii) The Value of Geo-Information for Disaster and Risk Management (VALID); (iii) International Year of Global Understanding (IYGU); and (iv) International Year of Deltas (IYD). GeoUnions were involved in the recent past in the joint project and programs related to Health and Wellbeing, Geosciences in Africa, International Year of Planet Earth and some others.

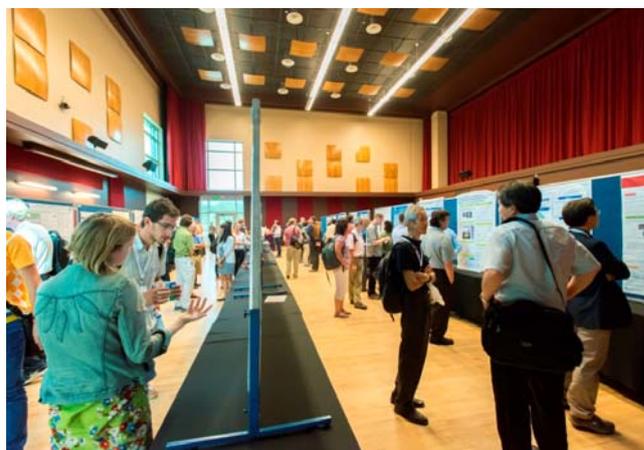
### ***Urban Health and Well-Being***

ICSU research programme on Urban Health and Wellbeing (<http://www.icsu.org/what-we-do/interdisciplinary-bodies/health-and-wellbeing-in-the-changing-urban-environment>) will be hosted at the Institute of Urban Environment (IUE) in Xiamen, China. The institute was selected to host the International Programme Office after an open competition. “Hosting this exciting new programme will contribute significantly to the internationalization of the institute. We will fully support the programme office, including by encouraging our staff to work with this international team for both research and capacity building in the next few years,” said Yong-Guan Zhu, IUE Director. “ICSU's new programme on health and wellbeing in the changing urban environment identifies the need for a novel approach using systems analysis to address the complex interactions,” said Indira Nath, chair of the Scientific Committee. “The International Programme Office is critical for its success. Its presence in Asia is appropriate as it is one of the fastest urbanizing regions of world. China's decision to invest in ICSU's enterprise within the walls of IUE provides the right environment and speaks volumes for the importance of the subject and of science for society” - she added.

Source: ICSU webpage

#### 4. Report on the 19th International Conference on Nucleation and Atmospheric Aerosols

The 19th International Conference on Nucleation and Atmospheric Aerosols (ICNAA) was held in Fort Collins, Colorado, USA, 24-28 June 2013. This meeting is one of the premier regular (quadrennial) international meetings concerning the formation, physical and chemical properties, transformations and cloud impacts of atmospheric aerosol particles. There were more than 230 attendees from six continents and 27 countries represented. The meeting offered a unique opportunity for young scientists to share research results and have discussions with an international cross-section of experts in their fields. The meeting focused on Nucleation Theory & Experiment, Tropospheric and Stratospheric Aerosols, Cloud Drop and Ice Nucleation, and Aerosol-Climate Interactions. A special session was held on CLOUD (Cosmics Leaving Outdoor Droplets), a project at the CERN facility, which studies the influence of galactic cosmic rays on the Earth's climate through the media of aerosols and clouds. Ten scientists delivered featured conference plenary talks of high current interest.



*At the ICNAA conference in Fort Collins, USA (photos: P.J. De Mott)*

IUGG co-sponsored travel of students and earlier career scientist to the Conference. The International Advisory Committee of the Conference reviewed 28 applications received for the IUGG travel grants, and awarded five graduate students from Austria, Germany, India, UK/Nigeria, and Sweden. All awardees were first-time conference attendees. Each awardee presented a paper at the conference, three of them orally and two in the well-attended poster sessions that composed eight hours over the first three days of the conference. The conference provided international exposure for awardees in a venue that was intensively focused within their major areas of research. At the same time, the meeting was intimate enough to provide for ample interaction with professional peers from around the world, interactions that will hopefully encourage the awardees to continue their professional development as scientists. The organizing committee of the conference was impressed by the maturity of the awardees, and the energy they brought to sessions through their thoughtful questions.

The papers presented at the meeting were published in the conference proceedings: DeMott, P. J., and O'Dowd, C. D., eds. (2013). *Nucleation and Atmospheric Aerosols, 19th International Conference*, AIP Conference Proceedings No. 1527, AIP Publishing, Melville, NY, ISBN: 978-0-7354-1152-4.

Received from Paul J. DeMott, co-Chair of the 19<sup>th</sup> ICNAA

## 5. Report on the Workshop on Measurement Problems in Ice Clouds

A workshop supported by IUGG was convened on 5-6 July 2013 at the ETH Zurich, Switzerland, to address issues related to ice particles in clouds and precipitation and how these particles impact weather and climate. The specific objectives were: (i) to identify critical, unresolved scientific questions related to the formation and evolution of ice in clouds, (ii) to summarize the uncertainties and limitations of in situ and remote sensors related to measurements of ice cloud properties, and (iii) to assess and evaluate potential approaches to reduce the uncertainties and to minimize the limitations related to measurements of ice cloud properties, including a review of emerging technologies. During the two days of the meeting there were 11 presentations (<http://www.iccp-iamas.org/>) that covered the current state of knowledge with respect to how ice forms in clouds and evolves into precipitation, the methods available for measuring ice particle properties and the types of models that are presently being employed to evaluate ice processes. Scientists and 12 students from nine countries were represented at the meeting. The proceedings of the workshop were summarized at the Davos Atmosphere and Cryosphere Assembly and will be published sometime in late 2014 as a monograph of the American Meteorological Society.

Received from Darrel Baumgardner, a workshop organizer

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## 6. Report on the Partnership Conference “Geophysical observatories, multifunctional GIS and data mining”

From 30 September to 2 October the ancient Russian town of Kaluga hosted the international partnership conference “Geophysical observatories, multifunctional GIS and data mining”. The conference in Kaluga, Russia was organized under the auspices of UNESCO as a part of the Year for the Mathematics of Planet Earth and supported by IUGG and IAGA. The organizers of the conference include the Russian National Committee for IUGG, the Russian Academy of Sciences, the International Institute for Applied Systems Analysis (IIASA, Laxenburg, Austria), the Institut de Physique du Globe (IPGP, Paris, France), Roshydromet, the Committee on Data for Science and Technology (CODATA), and the Russian Foundation for Basic Research.



*At the Partnership conference in Kaluga, Russia (photos: R. I. Krasnoperov)*

The conference program included the following scientific sessions and panel discussions: (i) Geophysical observation systems and data mining, (ii) High quality observations of the Earth’s magnetic field, (iii) Multifunctional intellectual methods for geophysical, ecological, socio-economic and biomedical research, (iv) Advanced system analysis, data mining and artificial

intelligence in processing time series from geomagnetic, geophysical, ecological, socioeconomic and biomedical observations, and (v) Geology, geophysics and geo-informatics of the Arctic region: multifunctional observatories and intelligent GIS.

The conference was attended by more than 120 scientists and data experts in geophysics, geo-informatics, environmental sciences, applied and advanced system analysis, and artificial intelligence from Austria, Canada, Czech Republic, Finland, France, Germany, Hungary, Russia, Switzerland, Ukraine, and the USA. One of the important objectives of the Kaluga conference was sharing knowledge, data and experience among partner organizations from different countries, which collaborate in the areas of research mentioned above. Expansion of the magnetic observatory network on the territories of Russia and Ukraine will help establish a corresponding segment of INTERMAGNET with a sufficiently uniform coverage. It will provide the world scientific community with data, required for more precise modeling of the geomagnetic field and recognition of the magnetic activity. During the panel discussions special emphasis was given to geomagnetic studies, ground and space geomagnetic observation systems, including expected results of the SWARM satellite project. Other key topics of the panel discussions included intelligent geo-information systems and technologies (IGIS) and modern mathematical methods. The panelists focused on applications of these techniques to geophysical, geological, socioeconomic and biomedical data and models. Principal tasks of geo-informatics include development of geo-information environment and methods of artificial intelligence for data mining. Their integration enables creation of multifunctional integrated geo-information systems for various purposes. Participants discussed the problems of integration of geo-scientific, environmental, biomedical and socio-economic data within a complex multifunctional intelligent GIS, provided with a wide range of algorithms for object-orientated analysis. Such IGIS is a sophisticated instrument for decision-making support in poverty mitigation, food and water problems, ecology improvement and world overpopulation. These problems are the three key research themes of the International Institute for Applied Systems Analysis (IIASA), and the conference also focused the attention of participants on the opportunities of joint projects within IIASA's research programs.

Received from Alexei Gvishiani, President of the Russian National Committee for IUGG

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## **7. Honors and Awards**

*Jaime Urrutia Fucugauchi* (IUGG Liaison Officer to ROLAC, Professor of UNAM, Mexico) has been elected to El Colegio Nacional, a Mexican honorary academy, for his contributions to the Earth and planetary sciences, education and outreach activities.

*Harsh Gupta* (IUGG President, Member of the National Disaster Management Authority, India) and *Kalachand Sain* (IUGG representative at the Bureau of the International Lithosphere Program, CSIR-National Geophysical Research Institute, India) received the 2012 Gondwana Research Best Paper Award of the International Association of Gondwana Research for the article "Gas hydrates in India: Potential and development" by K. Sain and H. Gupta.

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## **8. IUGG-related meetings occurring during December 2013 – February 2014**

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.

### **December**

- 9-13, AGU, San Francisco, USA, Fall Meeting of the American Geophysical Union.  
Web: <http://fallmeeting.agu.org/2013/>

### **January**

- 5-15, UNESCO-IOC, Kuwait City, Kuwait, Marine Phytoplankton Course. Web: [http://ioc-unesco.org/index.php?option=com\\_oe&task=viewEventRecord&eventID=1404](http://ioc-unesco.org/index.php?option=com_oe&task=viewEventRecord&eventID=1404)
- 12-17, WCRP, Queenstown, New Zealand, SPARC 2014 General Assembly.  
Web: <http://www.sparc2014.org/>
- 23-24, IAG, Bad Kötzing, Germany, EVN Technical and Operations Group (EVN TOG) Meeting. Web: <http://www.fs.wetzell.de/veranstaltungen/vlbi/tog2014/index.html>
- 27-30, UNESCO-IOC, La Jolla, USA, TPOS 2020: A future Sustained Tropical Pacific Ocean Observing System for Research and Forecasting. Web: [http://ioc-unesco.org/index.php?option=com\\_oe&task=viewEventRecord&eventID=1383](http://ioc-unesco.org/index.php?option=com_oe&task=viewEventRecord&eventID=1383)

### **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/ue-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)
- 24-28, IAHS, UNESCO-IHP, Hanoi, Vietnam, 7th Global FRIEND-Water Conference|  
Web: <http://www.unesco.org/new/en/natural-sciences/environment/water/ihp/ihp-programmes/friend/>

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**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.**