



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

## **The IUGG Electronic Journal**

**Volume 15 No. 3 (1 March 2015)**

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. The United Nations General Assembly urges sharing of geospatial data**

On 26 February 2015 the General Assembly of the United Nations (U.N.) adopted the first geospatial resolution “A Global Geodetic Reference Frame for Sustainable Development” ([http://www.un.org/ga/search/view\\_doc.asp?symbol=A69/L.53](http://www.un.org/ga/search/view_doc.asp?symbol=A69/L.53)). The Press Release published on this occasion by the U.N. states:

“The science that supports the precise pinpointing of people and places should be shared more widely, according to the United Nations General Assembly as it adopted its first resolution recognizing the importance of a globally-coordinated approach to geodesy – the discipline focused on accurately measuring the shape, rotation and gravitational field of planet Earth. Geodesy plays an increasing role in people’s lives, from finding disaster victims to finding directions using a smart phone.

The General Assembly resolution, A Global Geodetic Reference Frame for Sustainable Development, outlines the value of ground-based observations and remote satellite sensing when tracking changes in populations, ice caps, oceans and the atmosphere over time. Such geospatial measurements can support sustainable development policymaking, climate change monitoring and natural disaster management, and also have a wide range of applications for transport, agriculture and construction.

Emphasizing that “no one country can do this alone,” the General Assembly called for greater multilateral cooperation on geodesy, including the open sharing of geospatial data, further capacity-building in developing countries and the creation of international standards and conventions. Co-sponsored by 52 Member States, the resolution was originally put forward by Fiji. Ambassador Peter Thomson, Fiji’s Permanent Representative to the United Nations, explained that, as a Small Island Developing State, Fiji is vulnerable to increasingly severe natural disasters, sea-level rise and other problems triggered by climate change, but uses geodesy data to plan as best as it can. “We fully realize the importance of critical geospatial infrastructure and information in helping countries and decision-makers make more informed, evidence-based decisions on mitigation and preparedness,” Ambassador Thomson stated. Fiji also highlighted the power of precise positioning for United Nations peacekeeping, for which it contributes troops. “We believe that additional accurate geospatial data will help the blue helmets take decisions in an often volatile operational context, leading to greater effectiveness of UN missions,” Ambassador Thomson added.

Wu Hongbo, the United Nations Under-Secretary-General for Economic and Social Affairs, praised Member States’ efforts to “discuss, deliberate and decide on issues relevant to positioning geospatial information” and, noting that geodesy is fundamental for monitoring changes to the Earth, “stressed the significance of the global geodetic reference frame in supporting sustainable development.” 2015 is a crucial year in which world leaders will be called upon to determine the global course of action to improve people’s lives and protect the planet. With key finance, sustainable development and climate change conferences approaching, the focus on practical solutions and international cooperation in the resolution sets the right tone.”

This U.N. resolution recognizes the achievements of the International Association of Geodesy of IUGG in measuring and monitoring changes in the Earth’s system, including the development of the now adopted International Terrestrial Reference Frame. For more information: Committee of Experts on Global Geospatial Information Management (<http://ggim.un.org>).

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## 2. New nominations for IUGG Officers

Given below is the list of nominations for the IUGG Bureau and the Finance Committee as submitted by the Nominating Committee. The positions and the nominated candidates are:

<b>President:</b>	Michael Sideris (Canada, IAG)
<b>Vice-President:</b>	Kathy Whaler (United Kingdom, IAGA)
<b>Secretary General:</b>	Alik Ismail-Zadeh (Germany/Russia, IASPEI)
<b>Treasurer:</b>	Aksel W. Hansen (Denmark, IAMAS)
<b>Bureau Members (<i>Positions #1, #2, and #3</i>)</b>	
	Pierre Hubert (France, IAHS)
	Jianping Li (China, IAMAS)
	Chris Rizos (Australia, IAG)
	Kenji Satake (Japan, IASPEI/ IAPSO)
	Constantin Sava (Romania, IASPEI)
<b>Finance Committee</b>	
<i>Position #1:</i>	Corina Risso (Argentina, IAVCEI)
<i>Position #2:</i>	Virendra Tiwari (India, IAG)
<i>Positions #3 and #4:</i>	
	David Collins (United Kingdom, IACS/IAHS)
	Zoltan Hajnal (Canada, IASPEI)
	Jan Krynski (Poland, IAG)

Curriculum Vitae and resumés of the candidates are posted on the IUGG website: [http://iugg.org/elections/candidates2015\\_19.php](http://iugg.org/elections/candidates2015_19.php).

The officers of the Union and Associations, and the National Committees for IUGG may make further nominations and/or recommendations to the Nominating Committee. If new nominations for a given position are supported by at least three Presidents or equivalent officers of National Committees of Member Countries, and if they are accompanied by the written acceptance of possible nomination and a resumé outlining the position, research interests and Union related activities of the candidates, they shall be added to the list above. The deadline for adding nominations is **22 March 2015**. The resulting final list of nominations will be completed and distributed by 22 April 2015. Any questions concerning the nomination procedure should be sent to Uri Shamir, Chair of the Nominating Committee ([shamir@technion.ac.il](mailto:shamir@technion.ac.il)).

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### **3. Agenda of the IUGG Council Meeting**

According to IUGG By-Law 6 the Council Agenda should be sent to the Member Countries four months in advance. The IUGG Council meetings are open only to Adhering Body Delegates, Listeners designated by Adhering Bodies in Associate Status, the IUGG Executive Committee and Finance Committee, and guests invited by the President. A report of the decisions of the Council, including the officers elected for the 2015-2019 term, will be presented at the General Assembly Closing Ceremony in Prague, Czech Republic, on 1 July 2015.

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### **4. Extraordinary Executive Committee Meeting**

President Harsh Gupta called an extraordinary Executive Committee (EC) meeting to be held on Saturday, 18 April 2015, at the Department of Geodesy and Geoinformation, Vienna University of Technology (TUWien), Vienna, Austria. This extraordinary EC meeting will consider urgent issues related to individual membership, to strengthening relationship between the Associations and National Members, the draft Strategic Plan for 2016-2023, operations of the Associations, and some other issues.

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### **5. News from the Local Organizing Committee for the XXVIth IUGG General Assembly**

By the deadline of 8 February, the number of submitted abstracts was more than 5,700. This excellent outcome indicates the tremendous work done by the conveners of the assembly's symposia, the Scientific Program Committee of the General Assembly, the Local Organizing Committee, and C-IN – a Professional Conference Organizer. The IUGG Executive Committee thanks all these people and those who submitted their papers to be presented at the IUGG General Assembly in Prague. This assembly will be a world-class event with a state-of-the-art high quality scientific program.

#### Important Dates

**10 March 2015** – Accommodation Early Bird rate deadline

**31 March** – Notification to successful grantees and to the authors about the acceptance of their presentations at the IUGG General Assembly

**10 April** – Early-Bird Registration deadline. Payment of the registration fee after this date will attract the higher standard registration fee rate.

For more information: <http://www.iugg2015prague.com>

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## **6. Report on the 22nd Electromagnetic Induction Workshop**

Electromagnetic (EM) induction workshops are the premier events of IAGA Working Group I.2 organized for researchers around the world to exchange their latest developments in the field of geophysical electromagnetism. The 22nd workshop was held in Weimar, Germany, from 24 to 30 August 2014 and organized by a Local Organizing Committee representing German research institutions and companies. The workshop was attended by 400 people from 43 countries: 232 full delegates, 13 retired, 132 students (total: 377 delegates), and 23 accompanying persons. The total number of abstracts received was 371. The abstracts were made available to the participants of the workshop via the web site of the conference (<http://www.emiw2014.de>).



The workshop's sessions were grouped into six general themes covering a wide range of EM studies: (1) Instrumentation, Sources, and Data Processing; (2) Rock resistivity; (3) Theory, Modelling, and Inversion; (4) Exploration and Monitoring; (5) Tectonics; and (6) Global and Planetary Induction. Morning and afternoon sessions started with review papers from invited, internationally acclaimed scientists focusing on developments in EM. Afterwards, time was dedicated to discussing around 321 workshop posters on recent developments and latest controversies in EM induction. Main authors were invited to present their posters in one minute presentations in the lecture hall. Poster sessions were followed by oral presentations; overall 50 contributions were given as orals. The invited (review) talks were presented by Anne Neska (Conductivity anomalies in central Europe), Catherine Constable (Earth's Electromagnetic Environment at Frequencies above 1 Hz), Rita Streich (Controlled-source EM exploration and monitoring on land), Amir Khan (Understanding structure and constitution of Earth's mantle from joint analysis of geophysical data and laboratory-based conductivity profiles), Wiebke Heise and Susan Ellis (Conductivity as a constraint for geodynamical modelling), Tada-nori Goto (Recent advances of marine EM exploration - from shallow water environmental studies to deeper mantle imaging), and Oleg Pankratov (Applied mathematics in EM studies with special emphasis on an uncertainty quantification and 3-D integral equation modelling). The review papers will be published in a special issue of *Surveys in Geophysics*.

The EM induction workshops are traditionally accompanied by smaller splinter meetings before or after the main event. For the Weimar Workshop the LOC organized six tutorials in Germany covering a wide range of electromagnetic research: Marine magnetotelluric/EM (20 - 22 August, in Kiel); Numerical Methods (22 - 23 August, in Freiberg); EM for Exploration and Production (24 August in Weimar); Ground Penetrating Radar (1 September in Frankfurt); Airborne EM (1 September in Hannover); and Radio-Magnetotellurics / Transient EM (1-2 September in Cologne). Participation in the tutorials was free of charge for registered delegates of the main event and the interest was tremendous. Where places were limited, preference was given to young scientists (students or postdocs). The following social events took place during the workshop: icebreaker on 24 August, mid-workshop excursion on 27 August, workshop dinners in furt and Weimar, and several tours including Naumburger Dom, Wartburg castle, and wine-growing region of Saale-Unstrut.

We acknowledge the generous support of the workshop donors: the German Geophysical Society, the National Science Foundation, IAGA, IUGG, the GW Hohmann Trust, the Dublin Institute for Advanced Studies, and Freunde und Förderer der Universität Freiberg. The workshop was co-sponsored by Phoenix Geophysics, Shell, KMS, Metronix, NordWest, University of Adelaide, emgs, Geophysik GGD, Wintershall, EGU, IMAGIR, Zonge, technoimaging, and BakerHughes.

O. Ritter, Chair, LOC of the 22nd EM induction workshop

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## **7. Report on the XVI IAGA Workshop on Geomagnetic Observatory**

The XVI IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing was held from 7 to 16 October 2014 and jointly organized by the National Geophysical Research Institute (CSIR-NGRI) and the Indian Institute of Geomagnetism (IIG), Mumbai, India ([http://www.ngri.org.in/iaga13\\_14](http://www.ngri.org.in/iaga13_14)). The Golden Jubilee (1964-2014) of the Hyderabad Magnetic Observatory HYB (CSIR-NGRI) was commemorated by this workshop. The Workshop was inaugurated by IUGG President Harsh Gupta who also conducted the ceremonial felicitation of founder members of the Hyderabad Magnetic Observatory. The Workshop was followed by the Council Meeting of INTERMAGNET during 18-20 October 2014. A total of 80 delegates from 31 countries participated in the Workshop. Additionally there were about 20 invited speakers from India and 15 dignitaries bringing the total participants to 115.

Six specialized training sessions were organized including lectures, demonstrations, and practice and attended by twelve trainees and several observers: Geomagnetism (by Nandini Nagarajan); Conrad Observatory (video presented by Barbara Leichter); Measurement of magnetic variations (by Lars Pedersen); Absolute Instruments & measurements (by Alan Berarducci); Observatory practice - Processing of magnetic Data (by Joachim Linthe); and INTERMAGNET (by Joachim Linthe). Three afternoons were devoted to practical training and demonstrations of Absolute and azimuth measurements.

The last session was held in the form of a panel discussion, which became very lively due to participation from panelists as well as other delegates. Observers expressed their desire to learn more about data processing and to have access to codes, error analysis, and dialog with more experienced scientists to continue the learning process. The internet is being successfully used to transmit and share data. It should be used to provide forums for learning and problem solving, since many observers work in comparative isolation. A suggestion was made to have a page on the Division V website where observers could post queries, obtain codes and short articles. Some volunteered to write articles. There is a clear need to include processing as part of the IAGA

Workshops. More structured training during the Workshop where processing and baseline determination could be practiced should be planned in workshops henceforth.



In summary, the highlights of the scientific sessions include the developments on new instruments and measurement techniques to arrive at stable baselines. The variety of applications of geomagnetic data right from co-seismic signals, signatures of tsunamis to ionospheric and magnetospheric effects was the second significant highlight. The launch of the new program MAGNIO co-sponsored by the International Council for Science (ICSU) via IUGG with an aim of bringing the magnetic community of the North Indian Ocean region together was the third.

Kusumita Arora, on behalf of the Local Organizing Committee

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## **8. News from the International Council for Science**

### ***New Executive Director of ICSU***

The International Council for Science (ICSU) announced that Dr. Heide Hackmann is selected to be Executive Director of the Council's Secretariat. Heide Hackmann, a social scientist with extensive experience running international research organizations, joins ICSU from the International Social Science Council (ISSC), where she has been Executive Director since 2007. During her tenure, she strengthened ISSC's activity profile, membership base and financial position, and forged strong links with ICSU through key partnerships. These include the Integrated Research on Disaster Risk (IRDR) program and the Science and Technology Alliance for Global Sustainability, the consortium of international organizations that founded Future Earth. Hackmann also led the launch of the regular World Social Science Forums and spearheaded the development of a new series of World Social Science Reports. She initiated a new global social science research funding and coordination program on Transformations to Sustainability, which was launched in March 2014 as a major contribution to Future Earth. Announcing her appointment, Hackmann said that she felt "excited and grateful for the privilege to head the activities of ICSU, an organization with a long track record of strengthening international research collaboration, and now assuming a leadership role in securing effective collaborations between the sciences and with society in order to address global priority problems."

President of the International Council for Science, Gordon McBean, said: “We are extremely pleased to announce Heide Hackmann’s appointment as Executive Director. During her tenure at ISSC, she has demonstrated her ability to rally scientists from both the natural and social sciences to work together to address some of the biggest challenges facing humanity. ICSU will benefit greatly from her leadership, vision, and ability to build bridges between different disciplines.” He added that the Executive Board was “confident that Hackmann will lead the Council to renewed strength and influence.”

Hackmann was born in South Africa and completed her PhD in Science and Technology studies at the University of Twente, Netherlands in 2003. From then until 2007 she was Head of the Department of International Relations and National Quality Assurance and Director: CO-REACH (an EU-funded multi-lateral initiative for the Coordination of Research between Europe and China) at the Royal Netherlands Academy of Arts and Sciences (KNAW).

### ***Review of Targets for the Sustainable Development Goals: The Science Perspective***

ICSU, in partnership with ISSC, released a new report which provides an independent review of the 169 targets under the proposed Sustainable Development Goals (SDGs), which are set to be approved at the General Assembly of the UN in September. Bringing together the work of over 40 leading researchers from across the natural and social sciences, the report was released ahead of a major meeting at the UN in New York from 17-20 February, where negotiators in the Open Working Group discussed an over-arching declaration for the proposed framework, a “goal of the goals”. The authors find that the SDGs offer a “major improvement” over their predecessors, the Millennium Development Goals (MDGs). However, of the 169 targets beneath the 17 draft goals, just 29% are well defined and based on the latest scientific evidence, while 54% need more work and 17% are weak or non-essential. Many of the targets suffer from a lack of integration, some repetition and rely too much on vague, qualitative language rather than hard, measurable, time-bound, quantitative targets, the report finds. Authors are also concerned that the goals are presented in ‘silos’. The goals address challenges such as climate, food security and health in isolation from one another. Without interlinking there is a danger of conflict between different goals, most notably trade-offs between overcoming poverty and moving towards sustainability. Action to meet one target could have unintended consequences on others if they are pursued separately. Finally, the report highlights the need for an ‘end-goal’ to provide a big picture vision for the SDGs. “The ‘ultimate end’ of the SDGs in combination is not clear, nor is how the proposed goals and targets would contribute to achieve that ultimate end,” write the authors. They recommend that this meta-goal be “a prosperous, high quality of life that is equitably shared and sustained. “The full report can be downloaded from the ICSU webpage: <http://www.icsu.org/publications/reports-and-reviews/review-of-targets-for-the-sustainable-development-goals-the-science-perspective-2015/SDG-Report.pdf>

Source: ICSU webpage

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## **9. Awards and Honors**

***Stephen Sparks*** (Professor of the University of Bristol, UK, and President of IAVCEI, 1999-2003) is awarded the Vetlesen Prize. “Sparks helped to bring volcanology into the modern era, and his insights have improved our understanding of volcanic hazards globally (Nature GeoSciences)”. Considered the Nobel Prize of the earth sciences, the Vetlesen Prize is jointly awarded by the G. Unger Vetlesen Foundation and Columbia’s Lamont-Doherty Earth Observatory. Among the

previous recipients: Felix A. Vening-Meinesz (IUGG President, 1948-1951), Sir Harold Jeffreys (IASPEI President, 1957-1960), and Richard W. Peltier (Chair of the IUGG Commission on Mathematical Geophysics).

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

### March

- 1-6, IACS, IGS, ICIMOD, Kathmandu, Nepal, International Symposium on Glaciology in High-Mountain Asia. Web: <http://www.icimod.org/igs2015/>
- 14-18, UNISDR, Sendai, Japan, 3rd World Conference on Disaster Risk Reduction 2015. Web: <http://www.wcdrr.org/>
- 16-19, IAMAS, Kiel, Germany, SCC2015. Conference on Sun-Climate Connections. Web: <http://scc.geomar.de>
- 23-27, IUGG, IACS, IAMAS, Rosendal, Norway, Dynamics of Atmosphere-Ice-Ocean Interactions in the High-Latitudes Workshop. Web: <http://highlatdynamics.b.uib.no>
- 23-27, WCRP, Rottach-Egern, Germany, WCRP Grand Challenge Workshop: Clouds, Circulation and Climate Sensitivity. Web: <http://www.mpimet.mpg.de/en/science/the-atmosphere-in-the-earth-system/ringberg-workshop/ringberg-2014.html>
- 25-27, ISPRS, Munich, Germany, Photogrammetric Image Analysis & HRIGI High resolution earth imaging for geospatial information. Web: <http://www.pf.bgu.tum.de/isprs/pia15/index.html>
- 30 March - 2 April, EMSEV, the University of Athens, Athens, Greece, EMSEV - Bishkek RAS Workshop on fundamental problems on the earthquake generation processes and the way to monitor them for hazard mitigation. Contact: N. Sarlis <[nsarlis@phys.uoa.gr](mailto:nsarlis@phys.uoa.gr)>

### April

- 12-17, EGU, Vienna, Austria, EGU General Assembly 2015. Web: <http://www.egu2015.eu>
- 18, IUGG, Vienna, Austria, IUGG Extraordinary Executive Committee Meeting.
- 13-16, IAHS, Vienna, Austria, HydroEco2015: 5th International Multidisciplinary Conference on Hydrology and Ecology. Web: <http://web.natur.cuni.cz/hydroeco2015/>
- 21-23, IASPEI, SSA, Pasadena, CA, USA, SSA Annual Meeting. Web: <http://www.seismosoc.org/meetings/2015/>

### May

- 3-7, AGU, CGU, GAC, MAC, Montreal, Canada, 2015 Joint Assembly. Web: <http://ja.agu.org/2015/>
  - 11-13, IAG, Potsdam, Germany, GNNS+R 2015 Workshop. Web: <http://www.gnssr2015.org>
  - 11-15, IAU, Atlanta, Georgia, USA, Young Stars & Planets Near the Sun, IAU Symposium 314. Web: <http://youngstars.gsu.edu/>
  - 11-15, ISPRS, Berlin, Germany, 36th International Symposium on Remote Sensing of Environment (ISRSE-36). Web: <http://www.isrse36.org/>
  - 18-22, URSI, Gran Canaria, Spain, URSI AT-RASC 2015 (URSI Atlantic Radio Science Conference 2015). Web: <http://www.at-rasc.com>
  - 25-26, IAHS, Blida, Algeria, 6th International Conference - Water Resources and Sustainable Development. Web: <http://ciredd2015.ensh.dz/en/>
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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.**