



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. Preparations for the XXVI IUGG General Assembly

The XXVI IUGG General Assembly will be held in Prague, Czech Republic, from 22 June to 2 July 2015, with scientific sessions running from 23 June to 1 July. The Scientific Program of the Assembly can be found here: <http://www.iugg2015prague.com/scientific-program.htm>. A list of Keynote Speakers can be found at: <http://www.iugg2015prague.com/union-lectures.htm>. The Scientific Program Committee of the General Assembly invites the submission of abstracts on original work to be considered for oral or poster presentation at the Assembly.

The deadline for the submission of abstracts for those applying for travel grants is **15 January 2015**. The early bird registration fee (<http://www.iugg2015prague.com/registration.htm>) will be accepted until 10 April 2015 so that the Prague Local Organizing Committee can better plan for the expected attendance. After that, the fees will increase. Newsletters of the General Assembly are available at: <http://www.iugg2015prague.com/newsletter-subscription.htm>.

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## 2. Delegate certifications needed for the IUGG Council Meeting

The official notification of the XXVI IUGG General Assembly was sent to IUGG Adhering Bodies and National Committees on 23 July 2014. The letter asked the Adhering Bodies to send the name of their Delegate to the IUGG Council to the IUGG Secretariat by **1 February 2015**. This deadline ensures that the Council Delegates will receive the Council Meeting Agenda papers and other important information such as the venue of the meetings. In addition, all Adhering Bodies should issue credentials for their Delegates to the Association business meetings.

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## 3. Last call for invitations to host the 27th IUGG General Assembly

Invitations to host the 27th IUGG General Assembly in 2019 must be received by **22 December 2014** (six month before the next General Assembly, consistent with IUGG By-Law 6). The Guidelines for proposals are posted on the IUGG website (<http://www.iugg.org/assemblies/>) or can be received directly from the IUGG Secretariat [[secretariat@iugg.org](mailto:secretariat@iugg.org)]. The IUGG Site Evaluation Committee will evaluate all invitations, and a report will be given to the IUGG Council before their final vote.

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## 4. Early career scientists receive IUGG awards

On 5 November 2014 IUGG bestowed the Early Career Scientist Awards upon ten scientists for their outstanding research in Earth and space sciences and for international research cooperation:

- Ruiqiang Ding (China), Atmospheric Sciences
- Andreas Fichtner (Switzerland), Seismology
- Gregory Foltz (USA), Oceanography
- Matthias Huss (Switzerland), Glaciology
- Markus Hrachowitz (The Netherlands), Hydrology
- Ben Kravitz (USA), Atmospheric Sciences
- Ben Marzeion (Austria), Climatology
- Ilona Riipinen (Sweden), Atmospheric Sciences
- Johanna Salminen (Finland), Paleomagnetism
- Futoshi Takahashi (Japan), Geomagnetism

IUGG Early Career Scientist Awards will be presented at the 26<sup>th</sup> IUGG General Assembly in Prague, Czech Republic, 22 June – 2 July 2015 during an Honors ceremony. The awardees will give a talk at the U11 Early Career Scientists Symposium on Saturday, 27 June 2015. All Assembly delegates are welcome to attend the symposium.

The Award Committee was chaired by Jenny Baeseman, Norwegian Polar Institute, Tromsø (Norway). The Committee Members were Salvatore Grimaldi, Università degli Studi della Tuscia (Italy), Thorne Lay, University of California, Santa Cruz (USA), Satheesh Shenoi, Indian National Centre for Ocean Information Services, Hyderabad (India), Laszlo Szarka, Hungarian Academy of Sciences, Budapest (Hungary), and John Turner, British Antarctic Survey, Cambridge (UK).

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## **5. IUGG booth at the AGU Fall Meeting**

To better inform about the 26th IUGG General Assembly (22 June - 2 July 2015, Prague, Czech Republic) and IUGG in general, there will be an IUGG booth (No. 2728) at the Fall Meeting of the American Geophysical Union (AGU). The Fall Meeting will be held in the Moscone Center, San Francisco, California, from 15 to 19 December 2014. If you attend the AGU Fall Meeting, please visit the IUGG booth. Franz Kuglitsch (the IUGG Assistant Secretary General / Executive Secretary) looks forward to meeting you at the booth.

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## **6. Report on the IASPEI Regional Assembly**

The first assembly of the Latin American and Caribbean Seismological Commission (LACSC), an IASPEI regional Commission formed in 2012, was held on 23-25 July 2014 in Bogotá, Colombia. More than 230 participants from 25 countries attended the assembly and presented 242 papers (149 oral and 93 poster presentations). The presenters came from Argentina (10), Brazil (16), Chile (16), Colombia (84), Costa Rica (10), Mexico (10), Nicaragua (6), and Venezuela (8) as well as from Asia (2), Europe (15), South Africa (3), and USA (35). The meeting fully accomplished the main LACSC goals: to establish a framework for discussions, collaborations, and new acquaintances in the Latin American community, and to motivate seismology students and young scientists to be involved in seismological research. 65 students presented 27% of the papers. 24 students and young scientists were supported by a travel grant from IUGG and IASPEI.

The Exhibit Hall had five companies of geophysical instrumentation and services and five stands of journals and societies, including one of the Seismological Society of America (SSA). During the meeting, SSA granted 20 new free student memberships. SSA convened the session on “Subduction Zone Processes”, which was followed by a well-attended discussion on the “Subduction Zone Observatory”, a proposal for an international coordination of large multi-disciplinary and multi-national projects. The assembly fostered and promoted other initiatives on training and international collaboration. A pre-assembly one-day training course on the Earthworm system was attended by 16 people. The course, taught in Spanish and English, gave an overview of the new developments in Earthworm, as well as hands-on practice on installing and running the system. Three post-assembly workshops were also organized. IRIS Data Services held a 6-day training course presented by eight different lecturers for 33 participants on Managing Data from Seismic Networks. Following the IRIS Data Services workshop, the IRIS International Development project sponsored a 2-day Advanced Studies Institute that included two parallel sessions on the calculation of regional moment tensors by Bob Hermann and double differencing techniques by Felix Waldhauser. The GEM (Global Earthquake Model) Foundation organized a 5-day workshop for scientists working on the SARA (South America Risk Assessment) project, which was focused on the discussion of available PSHA regional models for Brazil, Chile, Colombia, Ecuador, and Venezuela. Training on the OpenQuake-engine and the Hazards Modeling Toolkit (HMTK) was also provided.

All participants enjoyed the meeting and look forward to the next LACSC Regional Assembly, which will be held in Costa Rica in 2016. The new 2014-2016 LACSC Executive Committee was formed with Marino Protti (Costa Rica) as President, Diana Comte (Chile) as Vice President, Carlos Vargas (Colombia) as Past-President, Marcelo Assumpção (Brazil) as Executive Secretary, and Hernando Tavera (Peru) and Nora Sabbione (Argentina) as Members at large. The Regional Assembly was organized by GEOSLAC (the Latin-American and Caribbean Association of Geosciences), the National University of Colombia, Antonio Nariño University, Valle University, Quindío University, the Colombian Society of Geology, and the Colombian Geological Survey. Significant financial support was provided by the Colombia Geological Survey (SGC - Servicio

Geológico Colombiano), which celebrated the 20th anniversary of the National Seismological and Strong Motion Networks.

Marcelo Assumpção, LACSC Executive Secretary

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## **7. Report on the 33rd Delegates Meeting of the Scientific Committee on Antarctic Research**

The Scientific Committee on Antarctic Research (SCAR) is an interdisciplinary committee of the International Council for Science (ICSU). SCAR is charged with initiating, developing and coordinating high quality international scientific research in the Antarctic region including the Southern Ocean, and on the role of the Antarctic region in the Earth system.

The 33rd Delegates Meeting of the Scientific Committee on Antarctic Research was held in Auckland, New Zealand, 1-3 September 2014<sup>1</sup>. SCAR has 31 full National Members, and 6 Associate National Members. At this 33rd meeting, the Czech Republic and the Islamic Republic of Iran were accepted as new Associate Members. Associate members are those countries which are still developing an independent Antarctic research program or which are planning a research program in the future. (The acceptance of the Czech Republic as a new SCAR member, already with a very active polar program, provided an opportunity for me to “advertise” the 26th IUGG General Assembly in Prague). There are also nine ICSU Union members of SCAR, including IUGG. Four of these were represented throughout the Delegates Meeting (IUGG, IUGS, IAU and IUPS), and a Delegate of IUBS attended for the agenda item concerned with Union members.

SCAR Delegates Meetings are held every two years to conduct administrative business and to formulate SCAR scientific policy and strategy. Ongoing SCAR science is managed by three Standing Scientific Groups (SSG) on Physical, Geo-, and Life Sciences. The SSGs on Physical Sciences and Geosciences have many overlapping scientific interests with all the disciplinary Associations of IUGG. SCAR focuses its internationally collaborative science efforts on high priority topics through Scientific Research Programmes (SRPs), which are often multi-disciplinary and are approved by Delegates. These receive management funding (not implementation funding) from SCAR for four years, and can be extended for another period. There are currently six SRPs, three of which are relevant to IUGG (broadly on: past ice sheet dynamics, present Antarctic climate evolution and ice sheet-solid earth interaction. See <http://www.scar.org/srp>). The existing SRPs are all continuing for at least several more years and this, because of funding limitations, precludes adoption of new research programs and directions until one or more of the existing ones are terminated.

A major topic of discussion at the meeting was the recently completed SCAR Antarctic and Southern Ocean Science Horizon Scan. This widely consultative process assembled the world’s leading Antarctic scientists, policy makers, leaders, and visionaries to identify the most important scientific questions that should be addressed by research in and from the southern Polar Regions over the next two decades. The overarching themes and 80 priority scientific questions identified by this process are published as a comment in *Nature* (<http://www.nature.com/news/polar-research-six-priorities-for-antarctic-science-1.15658>) and as a paper in *Antarctic Science* (<http://dx.doi.org/10.1017/S0954102014000674>) in more detail. Also at this meeting, SCAR commenced planning a strategic plan for 2017-2022 (further 5-years beyond the present plan for

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<sup>1</sup> Prior to the Delegates Meeting, and at the same venue, an Open Science Conference was held on the theme “Global Messages from Antarctica”. This attracted nearly 1,000 participants and demonstrated the breadth and quality of international science being carried out in the Antarctic region.

2012-2017). It was my observation, stated at the meeting, that with SRPs lasting for up to eight years, and “Horizon Scan” to 20 years and beyond, broad strategic thinking should extend further than a 5-year plan. Early career scientists will be extensively engaged in this strategic planning. SCAR was recently awarded the Prince Albert II of Monaco Prize for Biodiversity. This will be used to fund additional Fellowships for early career scientists, with a focus on biodiversity research.

The current President, Jerónimo López-Martínez (Spain) continues in that position and two new Vice Presidents were elected – Azizan Abu Samah (Malaysia) and Terry Wilson (USA). The 2016 SCAR Delegates Meeting and Open Science Conference will be held in Kuala Lumpur, Malaysia. The 2018 Delegates Meeting and Open Science Conference will take place in Davos, Switzerland. Then, the Science Conference will be bi-polar, held in collaboration with the International Arctic Science Committee. It will be the first major multidisciplinary conference covering both Arctic and Antarctic science since the 2012 International Polar Year Conference in Montreal, Canada.

Ian Allison, IUGG Liaison Officer and Delegate to SCAR

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## **8. Report on the 2014 EMSEV International Workshop**

The 17th International Workshop organized by the IUGG EMSEV Inter-Association Working Group on Electromagnetic Studies of Earthquakes and Volcanoes was held in Konstancin-Jeziorna, Poland, from 22 to 26 September 2014 (<http://emsev2014.cbk.waw.pl/>). This workshop was supported by IAGA, IAVCEI and IASPEI Associations, and was hosted by the Institute of Geophysics and the Space Research Centre with the contribution of the Polish Academy of Science. Jan Blecki with the help of the powerful local organizing committee produced a very successful, efficient and smoothly run meeting.

The focus of the meeting was on the observation and understanding of the various kinds of electromagnetic phenomena associated with seismic and volcanic activities, particularly from a multidisciplinary point of view. Session topics covered the following areas of interest: (1) Physics and Observations of Earthquake Preparatory Processes, (2) Constraints from Seismology, Geodesy and Other Geophysical Techniques, (3) Electrodynamics in Solids and Rock Materials – Theory and Laboratory Results, (4) Related Electromagnetic Signals and Other Physical Parameters to Earthquakes – Ground Base and Satellite Observations, (5) Related Electromagnetic Signals and Other Physical Parameters to Volcanoes, Geothermal Fields and Landslides – Ground Base and Satellite Measurements, (6) Signal Recognition, Data Processing and Modeling, and (7) Future Experiments, Missions and Theoretical Developments. More than 60 participants from 16 different countries attended the meeting and presented their most up-to-date results in oral presentations and with posters. The posters were displayed in the central meeting area during the meeting with significant results from each identified in short 2-minute summaries before the general poster viewing. In addition, invited talks on global-scale prediction of earthquakes, earthquake mechanics, volcano seismology, and geochemistry contributed to a better identification of the physical mechanisms involved in the generation of electromagnetic signals related to both volcanic and earthquakes activity.

The presentations during the meeting clearly showed the incredible progress made in documentation of reliable electromagnetic signals related to earthquake and volcano activity during the 13-years existence of EMSEV. Many powerful international groups have been set up and cross-correlations between electromagnetic and other geophysical data have successfully emerged. The two activities promoted by EMSEV in under-developed countries related to volcanic (Taal volcano, Philippines) and tectonic (Bishkek, Kyrgyzstan) activities. Now, each involves powerful consortiums for joint

observations. For Taal, experts from the Philippines, Japan, France, USA, Belgium, Italy, and Greece are working together while in Kyrgyzstan, joint efforts involve researchers from Kyrgyzstan, Russia, Japan, France, Greece, China and Poland. The identification of signals related to the transient disturbances of the ionosphere that might be associated with earthquakes is the target of a cooperative effort between USA, Japan, Russia, Taiwan, and France. Renewed and enthusiastic interest in using satellites to identify precursory EM signals related to earthquakes and volcanic eruptions will follow the launch of Chinese micro-satellites in 2016. Already, our EMSEV community is getting together on this issue.



The round table at the end of the meeting raised discussions on different topics, particularly the testing of predictability of EM and other geophysical parameters for impending earthquakes and eruptions. If signals are occasionally identified, it is extremely difficult to demonstrate reliable and repeatable estimates of precursor time delay, likely magnitude and likely location for an earthquake, although it is much easier for volcanic eruptions. Some proposals discussed were the importance of re-analyzing very long time series (i.e. over ten years) to build a database of reliable characteristics of signals, to produce 4-window tables corresponding to Anomaly (A) with Earthquake (EQ), A with No EQ, No A and EQ, No A and No EQ, and to work on the repeatability of signals such as in the case of the recurrent seismicity in Taiwan. The methodology on precursory electric signals used in Greece is now in the process of being tested in Kyrgyzstan and Romania.

During the 17th business meeting, Xuebin Du, from Lanzhou Institute of Seismology of China Earthquake Administration, offered to host the next EMSEV meeting in 2016. This proposal was accepted, and Chinese colleagues will discuss how to involve the largest possible Chinese community. Detailed information on EMSEV activities can be found at <http://www.emsev-iugg.org/emsev/>.

J. Zlotnicki, M. J. S. Johnston, T. Nagao, and J. Blecki, EMSEV leaders

## 9. Report on the First Congress of China Geodesy and Geophysics

The First Congress of China Geodesy and Geophysics (CCGG) brought together over 2,000 Chinese scientists and graduate students from universities and research institutes gathered at the China University of Geosciences in Beijing (CUGB), 25-26 October 2014, to exchange information on the latest progress in Earth and planetary sciences made by the Chinese community of IUGG, to discuss how the community can contribute to “Future Earth”, a 10-year international research programme, and to plan for the 2015 IUGG General Assembly. The theme of the congress was “From Global Change to Future Earth”. The Congress was composed of an overview session and 43 thematic sessions on all major subjects of IUGG. The “Youth Excellent Thesis Awards” for 10 graduate students were presented at the congress; the award was established to encourage young scholars to get involved in IUGG and Chinese National Committee for Geodesy and Geophysics (CNC-IUGG) activities.

Jianping Li, Secretary General of CNC-IUGG, opened the Congress and Guoxiong Wu, President of CNC-IUGG, and Jianyun Zhang, Vice President of CNC-IUGG, presided at the Opening Ceremony and invited lectures. At the Opening Ceremony, Kechang Xie, Vice President of the Chinese Association of Science and Technology (CAST), Yong Chen, Director of the Academic Division of Earth Sciences, Chinese Academy of Sciences (CAS), and Hongbing Wang, CUGB Secretary of Party, delivered welcome addresses. Dahe Qin, co-Chair of the IPCC Working Group I, and Vice President of CNC-IUGG, Harsh Gupta, IUGG President, Alik Ismail-Zadeh, IUGG Secretary General, and Chengshan Wang, Professor of CUGB, delivered lectures on “Climate Change and Cryospheric Sciences”, “Sustainability of Urbanization and Natural Hazards: Earthquakes and Tsunamis”, “International Cooperation in Geodesy and Geophysics to Benefit the Society”, and “Earth’s Deep Time Insight into Future Earth”, respectively.



*During the Opening Ceremony*



*Youth Excellent Thesis Awarding ceremony*



*Jianping Li*



*Guoxiong Wu*



*Jianyun Zhang*



*Kechang Xie*



*Yong Chen*



*Hongbing Wang*



*Dahe Qin*



*Harsh Gupta*



*Alik Ismail-Zadeh*



*Chenshan Wang*

CNC-IUGG is a non-governmental, scientific organization, established by CAS and CAST in 1979, dedicated to the promotion and coordination of Chinese scientific studies of Earth (physical, chemical and mathematical) and cooperation and communication with the international geosciences community. The first CCGG was jointly sponsored by the CNC-IUGG, CAST and the CAS Academic Division of Earth Sciences, and co-organized by Institute of Atmospheric Physics, CAS; Key Laboratory of Physical Oceanography, MOE, China; Beijing Normal University; National Administration of Surveying, Mapping and Geoinformation; Wuhan University; and Hebei Mapping Institute.

Jianping Li, CNC-IUGG Secretary General



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## 10. News from the International Council for Science

### *Future Earth 2025 Vision*

The Future Earth 2025 Vision sets out an ambitious, holistic framework for research and capacity mobilization. The document will provide a framework for Future Earth activities over the 10 years of the program and represents the ways in which Future Earth will deliver on its commitment to generate a step-change in sustainability research. Central to achieving the vision is a commitment to co-design and co-produce knowledge in collaboration with societal partners in order to develop solutions-oriented research that responds to the sustainability challenges facing society. For more information:

<http://www.futureearth.org/news/future-earth-2025-vision-sets-framework-programmes-contribution-global-sustainable-development>.

### *PrepCom2 for the Third World Disaster Risk Reduction Conference*

The International Council for Science (ICSU) took part in the second preparatory session for the Third World Disaster Risk Reduction Conference at the UN office in Geneva on 17-18 November. As the organizing partner of the Science and Technology Major Group, ICSU convened a delegation of more than 20 representatives from Europe, Latin America, Asia, Africa drawn from research organizations, IRDR programme and ICSU's Regional Offices and partner organizations such as the InterAcademy Panel (IAP). The Science and Technology Major Group made a series of inputs via statements in the technical workshops and co-chairs dialogue on issues ranging from the contribution that science can make in the implementation of the Framework, the links between the post-2015 agenda and Disaster Risk Reduction (DRR) and the integration of DRR with financing. While member states recognized the importance of science for DRR, there was agreement that many countries struggle to connect science with decision-makers at the national and local levels. The Science and Technology Major Group urged delegates to address this challenge by supporting a broad partnership between science and policymakers to implement evidence-based decision-making on disaster risk reduction.

Source: The IUGG and Future Earth webpages

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## 11. Awards and honors

Academia Europaea elected *Joan Marti* (IAVCEI Secretary General) as a Fellow of the academy for his outstanding contribution to volcanology. Congratulations to Joan!

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## 12. CTBTO Fellowship Application

The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) offers funded Fellowship opportunities to graduate and PhD students, recent graduates and post-doctoral researchers interested in doing research aimed at generating new and original solutions to problems in all areas related to the CTBT ([www.ctbto.org](http://www.ctbto.org)). The specific research should focus on the nexus between science and diplomacy as it relates to developments in the CTBT monitoring technologies and their impact on the prospects for its entry into force of the

Treaty. For more detail on the application for the Fellowship, please visit the web site (click [here](#)) for submission of application materials and research proposal by 15 December 2014.

Jean du Preez, Chief, CTBTO External Relations, Protocol and International Cooperation Section

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### 13. 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.

#### *December 2014*

- 7-11, IAVCEI, Taupo, New Zealand, 5th International Workshop on Collapse Caldera. Web: <https://staff.aist.go.jp/geshi-nob/CCC/>
- 11-14, IAHS, New Orleans, LA, USA, IAHS/ICCE International Symposium – Sediment Dynamics: From the Summit to the Sea. Web: <http://www.rnr.lsu.edu/icce2014/>
- 15-19, AGU, San Francisco, CA, USA, AGU Fall Meeting. Web: <http://fallmeeting.agu.org/2014/>

#### *January 2015*

- 9-10, URSI, Hooghly, West Bengal, India, International Conference on Foundations and Frontiers of Computer, Electrical Engineering : commemorating 150 years of Maxwell's Equations. Web: [http://www.ursi.org/en/event\\_item.asp?id=315](http://www.ursi.org/en/event_item.asp?id=315)
- 10-13, IMU, San Antonio, TX, USA, 2015 Joint Mathematics Meetings. Web: <http://jointmathematicsmeetings.org/jmm>
- 14-16, IRDR, Science Council of Japan, Tokyo, Japan. The Tokyo Conference on International Study for disaster Risk Reduction and Resilience. Web: <http://monsoon.t.u-tokyo.ac.jp/AWCI/TokyoConf/en/index.htm>
- 19-23, GCW CryoNet and Steering Group Joint Meeting, Copenhagen, Denmark

#### *February 2015*

- 25-27, ISPRS, Avila, Spain, 3D-ARCH: International Workshop on 3D Virtual Reconstruction and Visualization of Complex Architectures. Web: <http://www.3d-arch.org>

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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.**