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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 Web site (<http://www.iugg.org/publications/ejournals/>). Please forward this message to those who will benefit from the information. Your comments are welcome.

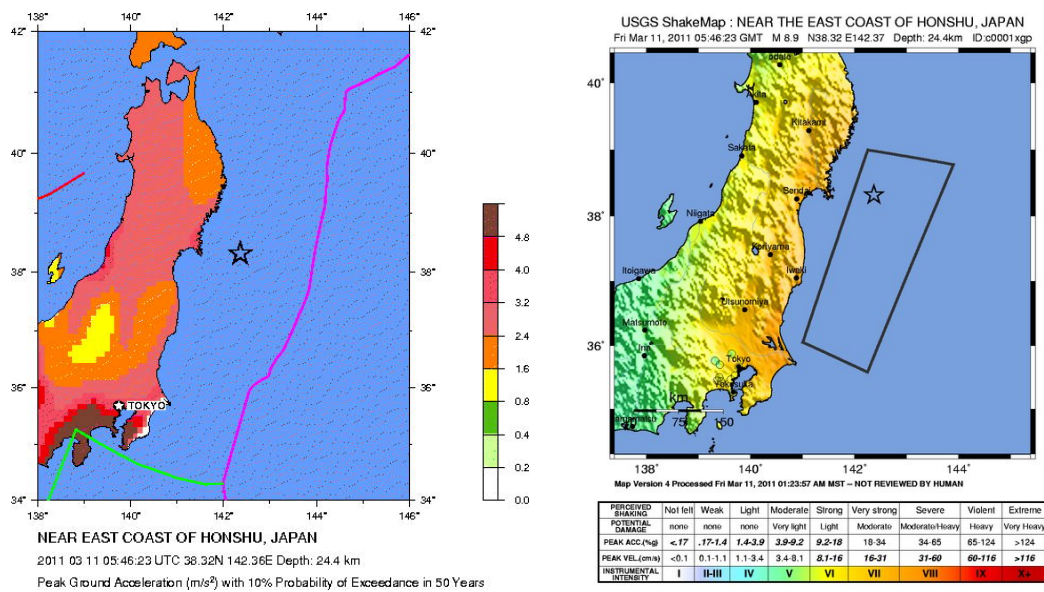
Contents

1. Editorial: Great Earthquake and Tsunami Disaster in Japan
2. News from the Melbourne General Assembly Scientific Programme Committee
3. IUGG Council Agenda Book
4. Report on the IUGG Project “Monitoring Taal volcano unrest in the Philippines”
5. Report on the CODATA 2010 Conference and General Assembly
6. Awards and Honors
7. IUGG-related meetings occurring during April - June 2011

1. Editorial: Great Earthquake and Tsunami Disaster in Japan

On 11 March 2011 Japan was struck by a magnitude 9.0 earthquake, one of the most powerful earthquakes ever recorded by Japanese seismologists or elsewhere, followed by a devastating tsunami. The TV images and videos of the destructions caused by the earthquake and the subsequent tsunami are shocking. This is a time of great trial for the Japanese nation. Our hearts go out to those in Japan who have suffered losses of loved ones and personal property in the geophysical disasters of the past few weeks. IUGG President Tom Beer and Secretary General Alik Ismail-Zadeh sent a letter to the Japanese National Committee for Geodesy and Geophysics expressing their condolences for those caught in this tragedy.

Japan is a well-known earthquake-prone region and is seismologically among the most well-studied areas of the Earth. As geoscientists we can ask: Was an event of such a magnitude expected to occur near Honshu? The answer is negative. Neither the world’s densest network of seismic stations nor the densest network of GPS stations in the country alerted to this great earthquake. No earthquake forecasts were issued in this case. Based on long-term observations, almost all seismologists were thinking that the largest earthquake in this region could be of magnitude 8. Looking at the regional seismic hazard map and the earthquake shake map (see figure), the answer of the question above becomes quite obvious: nobody expected an 9.0-magnitude earthquake in the region. The existing seismic hazard assessments evidently suffer from the neglect of scenario-based hazard assessments, especially those associated with extreme events.



The 11th March earthquake in Japan generated the maximum ground shaking (right panel) outside the area of the highest seismic hazards (peak ground acceleration, left panel).
Images from the USGS web-site.

Compared to the 2010 Haiti earthquake disaster, the disaster in Japan is of different nature. The Haiti earthquake would not be listed as a disaster if preventive measures had been implemented in advance of the event. Because of the preventive management of natural disasters by the Japanese government and proper science education of the population by Japanese scientists, the country met the great release of the Earth's stress rather well prepared, even though the event of 11th March was not expected to have such a huge magnitude. The Japan Meteorological Agency issued a tsunami alert in 3 minutes after the start of the earthquake rupture. All important control systems (including nuclear reactors) were properly shut down. Today it is rather clear that the unexpectedly high amplitude of the tsunami waves resulted in the death and the loss of many thousands of people and in damages of nuclear power plants.

Humans will never be able to prevent the occurrences of natural phenomena entirely. The case of the recent disaster in Japan has shown us again that the mitigation of disasters is an important and vital measure, which should be taken by every nation living with risks of natural hazards.

2. News from the Melbourne General Assembly Science Programme Committee

On 2-4 April 2011, Peter Manins, Chair of the Melbourne General Assembly Science Program Committee (SPC), will convene a meeting of the Committee, comprising the Association Secretaries General, with assistance from Arinex, Professional Conference Organizers, in Vienna (Austria) to finalize the schedule of symposia and workshops now being planned during the General Assembly (28 June – 7 July).

Abstract submissions are now closed (*except for last-minute symposia, see below*). The Local Organizing Committee (LOC) received more than 5000 abstracts that will be placed into sessions at the SPC meeting. At the same time, the Association Secretaries General reviewed the grant requests and allocated the money available to as many people as possible. The LOC contributed 300 registration fee grants; IUGG contributed US\$90,000, and each Association provided their own

funds to assist persons, especially students, earlier career scientists, and scientists from the developing countries, to attend the assembly.

Important Information and Dates

Recent events in the Pacific Region have caused the Scientific Program Committee to make a new Call for Posters to support:

- Special symposium sessions on the Sendai Earthquake, Tsunami and Nuclear Disasters, the Chile Earthquake and Tsunami, the Christchurch Earthquake Crisis, and the Brisbane Floods from Cyclone Yasi, keyed with a new workshop on the Greatest Disasters of our Times;
- The Symposium on Volcanic and Seismic Issues relating to Siting of Nuclear Facilities, and
- The Symposium on Monsoons, Tsunamis, Tropical Cyclones and Tropical Dynamics.

This Call for Poster Abstracts, only for submissions dealing with the Pacific Rim Disasters, is now open and will close on **11 April 2011**. Special arrangements have been made to accept late registrations for those whose abstracts are accepted. For more information, visit www.iugg2011.com/program.asp.

11 April – Early-Bird Registration deadline. Payment of the registration fee should be made at this time. Payment of the registration fee after this date will attract a higher standard registration fee rate.

26 April – Detailed Preliminary Program (presentations/authors allocated days etc) release.

3. IUGG Council Agenda Book

The Council Agenda Book, including the reports of the Secretary General and the Treasurer of the Union, has been e-mailed to the Member Countries three months in advance of the Council Meeting. 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 2011-2015 term, will be presented at the General Assembly Closing Ceremony on 7 July 2011.

4. Report on the IUGG Project “Monitoring Taal volcano unrest in the Philippines”

The Philippines archipelago suffers frequent and large catastrophic natural hazards (volcanic eruptions, earthquakes, cyclones, and tsunamis). These events induce great loss of human life, economic hardship and destruction of the social fabric. The Philippines Institute of Volcanology and Seismology (PHIVOLCS, <http://www.phivolcs.dost.gov.ph/>) is in charge of monitoring most of these hazards and provides direct response to Civil Authorities on the likely consequences and risks. In 2003, during an international workshop held in Manila for ‘Initiating seismic and volcanic electromagnetic (EM) monitoring in Asian countries’, PHIVOLCS and the IUGG Inter-Association on ‘Electromagnetic Studies of Earthquakes and Volcanoes’ (EMSEV, <http://www.emsev-iugg.org/emsev/>) proposed a tight cooperation on the Taal volcano. The Taal volcano is responsible for serious hazards in the region such as pyroclastic flows, base surges, and violent phreatic

explosions, as experienced during the previous 33 historical eruptions. Since the last long eruptive episode in 1965-1977, the Taal volcano has continuously exhibited sporadic and intense seismic activity, ground deformation, and surface activity. In 2004, PHIVOLCS and EMSEV signed a Memorandum of Agreement with the objectives to: (1) understand the interactions between the magma feeding system and the hydrothermal system buffered by both the hot acidic inner Crater Lake and the cold outer Taal Lake, the geological discontinuities along which heat and soil degassing prevail, (2) evaluate scenarios of activities, (3) monitor the volcanic activity, and (4) build an electromagnetic scientific community at PHIVOLCS.

Late in 2004, a newly formed PHIVOLCS EM team and a Japanese-French EMSEV team started to image the hydrothermal system, the geological and tectonic discontinuities with combined magnetic, electric, ground temperature and soil degassing surveys. Progressively, the international EMSEV community enlarged with researchers from Greece, Italy, USA, and Belgium. New research methods, also applicable by the PHIVOLCS EM team, were carried out, such as audiomagnetotellurics and resistivity soundings, magnetic and bathymetric mappings of the inner acidic lake, and bottom lake temperature. From these bi-annual field campaigns, new important results were obtained. These are now used in information planning by both the local inhabitants and the Civil Authorities. One outcome is that the northern part of the volcano is apparently undergoing strong thermal transfers, degassing, and mineralization. The activity takes place along active E-W fissures possibly linked to the root of the northern border of the Crater at a depth of some hundreds of metres, and connected to the hydrothermal/volcanic source of the volcano. This thermal source could be the primary focus of the next eruptive activity. In such a case, strong activity could induce a collapse of a part of the northern crater rim into the Crater Lake, due to mechanical weakening by the active 1992-1994 fissures.

Simultaneously with repeated surveys, EMSEV and PHIVOLCS have built a real-time monitoring network based on electromagnetic and other geophysical parameters as magnetic and electric fields, ground temperature and gradients, seismicity, and tilt. Data are automatically transferred to Taal volcano observatory, PHIVOLCS headquarter and EMSEV servers. Thanks to the real-time multi-parametric network, EMSEV was able to regularly process data and to inform PHIVOLCS about anomalous signals observed before and during the April to June 2010 strong seismic crisis. During this crisis, PHIVOLCS raised the alert level from 1 to 2 requiring a partial evacuation of the volcanic Island. Two new real time EM stations will be added to the 2 existing multi-parametric stations in 2011. In addition to these land observations, satellite Aster thermal imagery, MOPITT observations, and Robust Satellite Techniques will now be jointly performed.

PHIVOLCS is now a major contributor to the development of EM studies on the Taal volcano and to the analysis of its ongoing activity as it was stated during the February 2010 EMSEV-PHIVOLCS international workshop on 'Monitoring active volcanoes by electromagnetic and other geophysical methods; Application to Asian volcanoes'. The new Memorandum of Agreement for the coming 5-years is the confirmation of long term and successful cooperation between PHIVOLCS and the Inter-Association working group EMSEV. Further information can be found on EMSEV and PHIVOLCS web-sites (<http://www.emsev-iugg.org/emsev/> and <http://www.phivolcs.dost.gov.ph>). This cooperation was supported by an IUGG grant.

Received from Jacques Zlotnicki, EMSEV Chair

5. Report on the 2010 CODATA Conference and General Assembly

The Chair of the IUGG Union Commission on Data and Information (UCDI), Peter Fox, attended the 2010 CODATA Biennial Conference (<http://www.codata2010.com/>) and General Assembly as an IUGG representative in place of Charles Barton, the IUGG Liaison Officer to CODATA, who was unable to attend. These were held in Stellenbosch, South Africa, 24-27 October and 28-29 October 2010, respectively. Attendance was lower (260 registrants) than the 2008 CODATA Conference in Kiev (Ukraine). A substantial part of the program was of relevance to IUGG, and many IUGG scientists were strong contributors. Peter Fox presented a paper at Union Session F about IUGG's Union Commission for Data & Information. The new CODATA Officers elected at the General Assembly comprise: *President*: Huadong Guo (China), *Past-President*: Krishan Lal (India), *Vice-Presidents*: Takashi Gojobori (Japan) and Fedor Kuznetsov (Russia), *Secretary General*: Robert Chen (USA), and *Treasurer*: Michel Sabourin (Canada). Outgoing President Lal has been elected President of the Indian National Science Academy. Eleven Task Groups (TGs) and two Working Groups were approved. *eGY: Earth and Space Science Interoperability* is continuing. New TGs of particular interest to IUGG are (i) *Polar Year Data Policy and Management* and (ii) *Data at Risk*: <http://www.nature.com/news/2010/101102/full/468017a.html>. South Africa is spearheading activities to collect and curate research data about the African continent in an effort to shrug off its data-poor image. The 2012 CODATA Conference (23rd) and General Assembly (28th) will be hosted by the Academia Sinica in Taipei (China). The date will be announced later.

Received from Peter Fox, UCDI Chair

6. Awards and Honors

IUGG Awards Prize at BHP Billiton Science Awards



To build awareness of the XXV IUGG General Assembly among the Australian community, IUGG sponsored a special IUGG Prize at the 2011 BHP Billiton Science Awards. These awards are given for the best science projects undertaken by a secondary school student. The winner of the IUGG Prize was Tanvi Srinivasan from Queensland, who is pictured with her award certificate, for a project on the examination of salinity in wetlands. The prize was awarded at a ceremony on 15 February held at Scienceworks, the Victorian science museum in the Melbourne suburb of Spotswood.

EGU Vening Meinesz Medal



The Vening Meinesz Medal of the European Geosciences Union (EGU) will be presented to **Harald Schuh** (Director of the Institute of Geodesy and Geophysics, Technical University of Vienna, Austria and President of the Austrian National Committee for IUGG) in Vienna at the EGU General Assembly (3-8 April 2011) for his work in the field of Very Long Baseline Interferometry (VLBI) and his important contribution to space geodetic research. Harald Schuh has been working in the field of VLBI modelling and analysis for almost 30 years.

He has achieved a deep understanding in the complex dynamics of the Earth's motion with respect to the distant quasar system and the related processes covering Earth orientation, geophysics and astrophysics. Remarkable is his extensive work in determining Earth rotation, for which application of VLBI is indispensable. Moreover, he used VLBI – recently as president of the IVS (International VLBI Service) – for the realization of a kinematic inertial reference system and has pushed the steady improvement of VLBI measurement technology and analysis. Harald is a well-known member of the geodesy community and has been a member of many international scientific working groups of the International Association of Geodesy.

7. IUGG-related meetings occurring during April – June 2011

A calendar of meetings of interest to IUGG disciplines (especially those organized by IUGG Associations) is posted on the IUGG web site (<http://www.IUGG.org/calendar>). Specific information about these meetings can be found there. Individual Associations also list more meetings on their web sites according to their disciplines.

April

- 3-8, EGU, Vienna, Austria, General Assembly of the European Geosciences Union,
- 11-14, IAHS, UNESCO, Vienna, Austria, International Conference: The Status and Future of the World's Large Rivers
- 18-21, IAHS, WMO, Exeter, UK, International Symposium “Weather Radar and Hydrology”
- 20-21, IAHS, Nanjing, China, International Symposium on Climate Change and Water

May

- 2-5, IAHS, Vienna, Austria, HydroEco 2011: 3rd International Multidisciplinary Conference on Hydrology and Ecology: Ecosystems, Groundwater and Surface Water - Pressures and Options
- 3-8, ISPRS, Antalya, Turkey, Conference on GeoInformation for Disaster Management (Gi4DM) and the ENHANS special session on “Extreme Natural Hazards and Disaster Risk in the Middle East Region”
- 9-12, AGU, Charleston, USA, Chapman Conference: Modeling the Ionosphere/Thermosphere System
- 16-20, IAG, Bad Kötzing, Germany, 17th International Workshop Laser Ranging

June

- 2-5, IAHS, Vienna, Austria, HydroEco 2011: 3rd International Multidisciplinary Conference on Hydrology and Ecology: Ecosystems, Groundwater and Surface Water - Pressures and Options
- 5-8, IAHS, Golden, CO, USA, MODFLOW and More 2011: Integrated Hydrologic Modeling
- **27 - July 8, IUGG, Melbourne, Australia, XXVth IUGG General Assembly**

End of IUGG Electronic Journal Volume 11 Number 4 (1 April 2011)

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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 by the Editor.