

International Association of Seismology and Physics of the Earth's Interior (IASPEI)

Quadrennial Report 2007-2010

IASPEI promotes the study of problems relating to earthquakes, the propagation of seismic waves, and the internal structure, properties, and processes of the Earth. Comprehensive minutes of the past Quadrennium and other information are posted on the IASPEI website, <http://www.iaspei.org/>.

IASPEI 2007 General Assembly at Perugia (Italy)

For its 2007 Perugia General Assembly IASPEI arranged 10 IASPEI-related symposia and workshops, 17 Inter-association symposia and workshops - out of which 8 were IASPEI-led - and 2 Union symposia (High-performance computations in geosciences and Early warning of natural hazards). Moreover, 11 official IASPEI meetings were held. Details can be found in the IUGG 2007 Conference Comptes Rendus. IASPEI had almost 1200 abstracts presented, of which 562 oral and 637 posters. At least 458 participants were officially IASPEI affiliated, but the number of IASPEI participants is estimated at more than 700. The adopted resolutions can be viewed on the IASPEI website.

IASPEI 2009 Scientific Assembly at Cape Town (South Africa)

IASPEI organized its 35th Scientific Assembly in Cape Town, South Africa, from January 10 to 16, 2009. It was held in an excellent venue, the centrally located Cape Town Convention Centre. The Local Organizing Committee under the leadership of Gerhard Graham and Michelle Grobbelaar, consisted of members of the Council of Geosciences, University of Witwatersrand and others also from neighboring countries.

There were 347 participants from 60 countries registered for the Assembly. Eightythree of them were students, young researchers and researchers from less-developed countries who were partially sponsored.

Three Keynote lectures were delivered at the Assembly: Tom Jordan talked on "Earthquake Forecasting and Prediction: Progress in Model Development and Evaluation"; Raoul Madariaga discussed "Earthquake Dynamics: from source to radiation"; and Guust Nolet presented "Seismic tomography and the dilemma of the Earth's heat budget".

The 32 symposia of the programme covered the spectrum of research related to IASPEI Commissions and current "hot" topics in seismology, in a total of 335 oral and 106 poster presentations. These included, a session on "Capacity building and capturing undergraduate students to Geophysics/Seismology", and two well-attended Panel discussions convened by R. Musson on: "Seismic Hazard: Living with Uncertainty" and "Earthquake Prediction: What the Future Holds". Several IASPEI commission and working group meetings were organized during the Assembly.

The Local Organizing Committee, with the determinant support of the South-African Council for Geoscience, did a great job ensuring a smooth management and enjoyable social moments. Several pre- and post-conference fieldtrips were also organized.

A Summer school was organized in conjunction with the IASPEI Scientific Assembly and held during the week after the conference ended, attended by 27 fully sponsored, mostly African participants.

The products of IASPEI Scientific Assembly in South Africa, including adopted resolutions, abstract volumes, keynote lectures, and useful meeting data are available at <http://www.iaspei.org/>.

The next IASPEI Scientific Assembly, after the General Assembly in connection with the IUGG 2011 one in Melbourne, Australia, will be held in Göteborg, Sweden, in July 2013 together with IAPSO and IAHS.

Asian Seismological Commission (ASC) meetings

ASC2008, Tsukuba, Japan

The Asian Seismological Commission (ASC) 2008 7th General Assembly was held, in conjunction with the Seismological Society of Japan (SSJ) 2008 Fall Meeting, from 24 to 27 November 2008 in Tsukuba, Japan, at the Tsukuba International Congress Center.

This was the first joint meeting of ASC with a national seismological society and resulted in a big success, thanks to the joint organization and the efforts of the SSJ to raise the necessary funding. About 760 scientists (more than 600 from Japan) from 39 countries and regions have participated to the well-organized conference, which was structured in 22 thematic sessions. The ASC has received from IUGG (through IASPEI) a financial support. The full conference report is available on the ASC website: <http://www.asc1996.com/>

ASC2010, Hanoi, Vietnam

The 8th General Assembly of the Asian Seismological Commission was held during November 8-10, 2010 in Hanoi, Vietnam. 287 from 32 countries participated to the well-organized conference that had its venue at the Vietnam Academy of Science and Technology. 70 Participants received full or partial grants from LOC. 208 abstracts were printed in the *ASC2010 Programme and Abstracts*, 150 posters and 117 reports were scheduled. The gala dinner on the boat cruising the big Hanoi lake was unforgettable.

The conference was preceded by a Pre-Assembly Training Course on Seismic Hazards and Disasters in Asia, attended by 20 participants. Eleven participants took part to the Post-Assembly Field Trip to the Red River Fault Zone. Evidences of seismic activities along the Red River fault zone (its Vietnamese segment) during the late Tertiary-Quaternary period were presented through the tectonic evolution by structural analysis of fractured pebbles in Miocene conglomerates and Morphotectonic study of active faults.

The venue of the next 2012 ASC conference will be: Ulaan Bataar, Mongolia.

The European Seismological Commission (ESC) meetings.

ESC2008, Hersonissos, Crete island, Greece.

The European Seismological Commission (ESC) held its 31st General Assembly in Hersonissos, Crete Island, Greece. About 450 scientists have participated to the

conference, that was structured in 28 sessions organized within 12 thematic areas. The conference organiser was the Institute of Geophysics of the National Observatory of Athens under the leadership of prof. Gerassimos Papadopoulos.

The conference report is available on the ESC website: <http://www.esc-web.org/>

ESC2010, Montpellier, France.

The 32nd General Assembly of the European Seismological Commission was held during September 6-10, 2010 in Montpellier, France.

A record attendance of 739 from 63 countries is a clear evidence of a successful event. The total attendance includes 701 registered participants, 8 master students from Montpellier University who followed keynotes and 29 high-school students and their teachers who presented their experiments in seismology on Friday morning. The gala diner was attended by 350 people.

From a questionnaire distributed to participants the major highlight of the conference was the scientific program, perceived as attractive. Also the many keynotes given have been appreciated and as well as the extension of the topics beyond core seismological fields. The videos of the keynotes are available online at:

<http://www.emsc-csem.org/News/esc2010/>

The Young Seismologist Training Course 2010 followed the conference and took place in the period 13 – 17 September 2010. The venue of the Course was the University Montpellier 2, and the title of the course was **Urban Seismology**. There were 19 participants from 17 countries. IASPEI provided as usual some financial support.

The venue of the next 2012 ESC conference will be: Moscow, Russia.

Other major initiatives with IASPEI Participation

International Scientific Studies conference (ISS-2009), June 2009, Vienna, Austria.

IASPEI participated with its President and Secretary General to the International Scientific Studies conference (ISS-2009) organized by the CTBTO in June in Vienna. P Suhadolc was one of the panelists. The ISS-2009 evaluated the capability and readiness of the Comprehensive Nuclear-Test-Ban Treaty's (CTBT) verification regime to detect and locate nuclear explosions worldwide and addressed relevant scientific and technical developments since the Treaty opened for signature in 1996, in particular the International Monitoring System and the on-site inspection regime. The conference consisted of plenary sessions, keynote speaking sessions, panel discussion sessions, thematic presentation sessions, poster sessions and exhibitions. It was attended by diplomats, officials, scientists, representatives from non-governmental organizations and the media. The ISS Scientific Panel consisted of Coordinators who were responsible for overseeing the work undertaken within the above topic areas and reviewed the scientific contributions submitted. The Coordinators for Seismology were: Prof. Wu Zhongliang and Prof. Barbara Romanowicz.

AGU Meeting of the Americas. August 2010, Iguassu Falls, Brazil.

The Meeting The AGU Joint Assembly (or "Meeting of the Americas") had a total of 2012 participants. There were 19 two-hour oral sessions and 11 poster sessions in Seismology or co-sponsored by Seismology. All major South American seismology groups were represented in the meeting.

The IASPEI logo was shown in both the AGU and the local webpage. It was also printed in the AGU program book and in the folder distributed to all participants. Student support IASPEI gave a total of US\$ 6,000.00 to support attendance of Latin American graduate students.

The total number of student applications in the Seismology section was 18. Nine of these applications were from South American students: 3 from Argentina, 4 from Chile, 2 from Brazil. We selected six students: three from Argentina and three from Chile, all of them doing a Ph.D. program.

Global Earthquake Model

The IAEE-IASPEI Joint Working Group on the International Alliance of Seismology and Earthquake Engineering Professional Associations activities were related to one of its missions: the GEM project, a global risk assessment initiative. P Suhadolc has been elected in the Governing Board of the GEM Foundation as IASPEI representative and has attended several meetings in 2009 and 2010, in June at Hohenkammer (Munich), in December in Paris, in June 2010 in Washington, in December 2010 in Singapore. The GEM initiative is progressing extremely well and a number of Projects have been assigned to groups of the seismological worldwide community to study basic seismological input data for seismic hazard assessment.

Other IASPEI-supported meetings

IASPEI has sponsored (on its own or via an IUGG grant) the following workshops/symposiums:

10th International Workshop on Modeling of Mantle Convection and Lithospheric Dynamics, September 2-7, 2007, Carry-le-Rouet, France.

International Trainings Course on Array Seismology, June 30 – July 3, 2007, Arezzo (Italy).

IRIS Seismological Workshop ‘Managing Waveform Data and Related Metadata for Seismic Networks’, October 21-26, 2007, Kuala Lumpur, Malaysia

International Scientific Conference to mark the 50th Anniversary of the Founding of the Geophysical Observatory of Addis Abeba University, November 1- 4, 2007, Addis Abeba, Ethiopia.

38th European Seismological Commission General Assembly: Young Scientists Training Course, September 2008, Chania, Greece.

7th Asian Seismological Commission General Assembly: ASC International Trainings School, November 2008, Tsukuba (Japan).

WG Subduction Zones in Less-developed Countries, WG meeting at IAVCEI2008 Scientific Assembly, August 17-22, 2008, Reykjavik, Iceland.

The Second International Seminar on Prediction of Earthquakes Prediction, Lisbon, Portugal, 29-30 April, 2009.

International Symposium on Earthquake Seismology and Earthquake Predictability, Beijing, China, May, 2009; organized by the Seismological Society of China and the Institute of Geophysics, CEA.

Workshop: From Core to Crust: Towards an Integrated Vision of Earth's Interior July 20 – 24, 2009, Trieste, Italy, at The Abdus Salam International Center for Theoretical

Physics

Advanced Workshop on Evaluating, Monitoring and Communicating Volcanic and Seismic Hazards in East Africa, August 17 - 28, 2009, Trieste, Italy, at the Abdus Salam International Center for Theoretical Physics.

The International Geodynamics meeting at Suzdal, near Moscow, August 2009 with topics ranging from crustal dynamics to core convection.

IRIS Seismological Workshop 'Managing Waveform Data and Related Metadata for Seismic Networks', November 8-16, 2009, Cairo, Egypt.

The 11th International Workshop on Modeling of Mantle Convection and Lithospheric Dynamics held in Braunwald, Switzerland from June 28 to July 3, 2009.

The VIII International Workshop "Physics and Forecasting of Rock Destruction", Saint Petersburg, Russia, from 24 to 29 May 2010.

The IRIS Workshop on "Managing Waveform Data & Related Metadata for Seismic Networks", Foz do Iguaçu, Brazil, 13-19 August 2010.

13th Business Meeting of IASPEI/IAGA/IAVCEI Inter-Association Working Group on Electromagnetic Studies of Earthquakes and Volcanoes (EMSEV), October 6, 2010, Chapman University, California, USA. The deployment of equipment for joint studies of electromagnetic, seismic and deformation of Taal volcano near Manila in the Philippines has been partly supported by IASPEI.

Meetings and activities in 2011

IUGG2011 General Assembly, Melbourne, Australia. June 28 – July 7, 2011.

The Fourth International Symposium on the effects of Surface Geology on Seismic Motion, will be held in Santa Barbara, California, USA in August 2011.

Seismotectonics and Seismic Hazards in Africa, a session at the CAG23, 7 - 14 January, 2011, Johannesburg, South Africa.

Short course on Waveform Inversion for local earthquakes. OVSICORI Institute, Universidad Nacional de Costa Rica, Heredia, Costa Rica. Fall 2011.

International Symposium on Geophysical Imaging with Localized Waves, Sanya, Hainan Island, China. July –August 2011.

12th International Workshop on Modeling of Mantle Convection and Lithospheric Dynamics. Groß Dölln , Germany. August 20 to 25 2011

Scientific Programmes, Projects, Publications

The IDEA (International Digital Earthquake Archives) project of the Committee for Preservation of WWSSN and Historical Seismograms (also called simply *Seismoarchives: Seismogram Archives of Significant Earthquakes of the World*), is continuing under the guidance of Willie Lee. IRIS is archiving the scanned seismograms.

Several projects have been completed, let us recall a major one: *Collecting and Scanning Seismograms in Support of the USGS/CMG Tsunami Hazard Potential in the Caribbean Project* (August, 2006 to December, 2007)

Recently, an IUGG-funded IASPEI-ISC Project *Networking of world seismologists*

(Improving Geophysical Science Link to the Society during Natural Extreme Events, Especially in Developing Countries) has started.

IASPEI and ISC will develop and maintain a worldwide registry of seismologists & geophysicists willing to serve as a point of contact in countries with and without affiliation to IUGG, with a particular focus to developing countries. This registry will be readily available for scientific & research institutions, governmental bodies, charitable and relief organizations and media following natural extreme events such as earthquakes and tsunamis.

IASPEI has set up an Scientific Advisory Board (SAB) for the GEM hazard global component project *Global Instrumental Earthquake Catalogue* under the leadership of ISC. IASPEI has received financial support from this grant for this activity. The money is intended mainly for reimbursing the SAB members and for related IASPEI administration.

Publications

The following publications are available from the IASPEI Secretariat. IASPEI on approval distributes free copies of its publications to institutional libraries in less developed countries.

- *IASPEI: Cooperation for Better Understanding of the Earth* (26-page brochure).
- *International Handbook of Earthquake and Engineering Seismology (Part A and B)*, a two-volume comprehensive review, a state-of-the-art reference for seismologists, earthquake engineers, geologists, and geophysicists. For more information, consult the website, <http://www.academicpress.com/quake>.
- *New Manual of Seismological Observatory Practice* provides the essential scientific and technical fundamentals, reveals their inter-relationships, and motivates observatory personnel to do their jobs as carefully as possible. An electronic version is being prepared.

IASPEI Newsletter

Finally, during the past quadrennium IASPEI has upgraded its old bulk E-Mail System to broadcast timely announcements about forthcoming meetings and other information of interest to IASPEI members. Since a few years it is distributed as *IASPEI Newsletter* in a new vest as a pdf file both by e-mail and posted on the IASPEI website. Past copies can be downloaded from the IASPEI website. In the quadrennium 2007-2010 there were 20 issues distributed worldwide.

IASPEI Website

IASPEI has its own website www.iaspei.org maintained by the webmaster Alice Walker. It is foreseen that in 2011 the domain will move from the USA to a new server at BGS, UK.