

Earthquake Hazard and Risk and Strong Ground Motion Commission Report to the IASPEI2009 General Assembly

The SHR commission activities in 2008 are as follows:

1. Preparation for publication of the book on “Earthquake Hazard and Risk Methods”

Considering the educational and knowledge dissemination mission of SHR commission; as well as answering the growing demand among graduate students, engineers, risk analysts, insurance companies and other for an Integrated presentation of hazard assessment, vulnerability analysis of buildings, lifelines, infrastructures and industrial facilities, risk analysis of a structures/urban systems, quick and detailed loss estimation, in a unified language and step by step procedure; an agreement has been signed on November 2008 with Springer for a book entitled “Earthquake Hazard and Risk Assessment Methods”. The book will be written by a group of 30 well known scientist and edited by Mohsen Ghafory-Ashtiany with the help of Zhongliang Wu and Charles Scawthorn. The expected time of publication is early 2011. It is envisaged that the book will be endorsed by both IASPEI and IAEE.

2. Establishment of Joint Working Group on “Dialogue Among Seismologist and Earthquake Engineers” (WG-DSEE)

Despite the great advancement of earthquake related science and technologies, the issue of implementation of the existing know-how remains the biggest challenges for the scientific community. To answer this challenges and for effective reduction of the growing earthquake risk; requires maximum participation, cooperation, collaboration and active dialogue between all earthquake related expertise: earth scientist, seismologist, earthquake engineers (geotechnical and structural), urban planners, socio-economist and managers; in order to identify the key questions and the methodologies that are required for achieving seismically safe environment. Why? Because we are still lacking the “Total View” to risk; and we are behind in providing prescriptive, simplified and easy-to-do solutions for the common structures, specially the common housing units.

Considering the above mentioned facts, special session on “Dialogue Among Seismologist and Earthquake Engineers” was jointly organized by IAEE and IASPEI during the 14 World Conference in Beijing during October 2008. The invited session participants (President and General Secretary of IAEE and IASPEI, Directors of IAEE, etc.) emphasized the importance of the issue and all agreed to pursue the proposed idea by forming the IAEE-IASPEI Joint Working Group (WG-DSEE) composed of Luis Esteva, Peter Suhadolc, Brian Tucker and Mohsen Ghafory-Ashtiany as the Chair of the WG. The establishment of the WG-DSEE was formally approved by the IAEE General Assembly with the objective of initiating an active dialogue and exchange of know-how among all related specialist in the filed of earthquake risk management in order to identify and classify the key issues and try to provide answers compatible to the level of the knowledge and expertise of the respective implementer and users. It is recommended that IASPEI GA also endorse and approve this WG. The WG activities are:

- Develop a mechanism for starting the critical and in-depth discussion among the earthquake related scientist
- Hazard and Risk workshops with basic applications to simple and non-engineered structures (proposal: start with Schools safety program)
- Hazard and risk assessment for highly hazardous (NPP) structures – need for strong co-operation (specialised workshop needed)
- Support and cooperate with the GEM project
- Joint effort for outreaching the public and government

It should be noted that this working group will also pursue the implementation of the planned activities of the “International Alliance of Seismology and Earthquake Engineering Professional Associations (IASEEPA)”. The IASEEPA objective is to determine what specific types of activities the world’s seismology and earthquake engineering professional societies could *jointly* undertake to better influence public policy and advocate seismic safety, internationally, in order to reduce earthquake losses could be a good start.

3. Endorsing the Integrated Disaster Risk Management (IDRiM) Journal

The main objective of IDRiM is to provide an integrated and implementable approach to the growing demand for disaster risk reduction and management by offering reliable, affordable and effective solutions for minimizing the loss of life, property damage, and social and economic disruption. IDRiM also explores implementation science for disaster reduction. The Chief Editor of the Journal are Mohsen Ghafory-Ashtiany (IIEES) and Norio Okada (Kyoto University). The Associate Editors are: Walter Amman (GRF-Davos), Peijun Shi (Beijing Normal University) and Aniello amándola (IIASA). Considering that the objective of the Journal is compatible with the SHR comisión objective, it is recommended that IASPEI-SHR comisión endorse this Journal as well.

4. Report on Earthquake Risk Session (R2):

The R2 Session with the objective of addressing and discussing the new initiative and issues related to Earthquake Risk Analysis such as: structural vulnerability analysis, socio-economic vulnerability analysis, risk analysis methodologies, earthquake risk modeling, earthquake loss estimation, how to use GIS and remote sensing data for SR analysis and mapping was held on Monday from 11:30 to 4PM and 8 papers were presented addressing the above mentioned objectives. The morning session was well attended with good questions and good follow-up with the speakers after the session. Most of the presented papers have been published before; however Denis Hatzfeld and Mohsen Ashtiany can form a good joint paper for the Elsevier journal.

5. First and Second Global Platform on Disaster Risk reduction (2007 and 2009)

Following on the IASPEI presence at the GP meeting on June 2007, it is recommended that IASPEI would show a more active presentation in the next General Assembly of the GP on DRR in June 2009.

Also, Ashtiany and Gupta (member of the UN-ISDR Science and Technical Commission) plan to develop a proposal that enhance the role of the scientific communities, mainly IASEPI and IAEE, in the growing DRR related activities of the UN. IASPEI endorse this mission led by SHR commission and/or WG-DSEE.

6. SHR Commission Meetings: Beijing and Cape Town

SHR commission held a meeting during 14WCEE conference in Beijing on October 2008 to discuss the future program of the commission. Six of the SHR commission member attended the meeting. Peter Suhadolc welcomed the new SHR member and explained the commission mission. Ashtiany explained the SHR intended program for the future, specially the initiative of the publishing the book on Hazard and Risk Management Methods. Members welcomed this initiative and pledged their support and cooperation. To further pursue the commission activities, it was suggested that specific SHR workshop to be held in 2009 with the presence of all of the members in order to develop a long-term plan of activities of the commission.

The SHR commission also held a short meeting in Capetown

7. Activities of the active SHR-WGs:

- WG-I: The IAEE-IASPEI joint WG on site effect of site geology (JWG-ESG) led by Kawase met during the assembly...???
- WG-II: The SHR-ASC joint WG on seismic hazard in Aisa-Pacific led by Gibson (ASC) and Romanelli (SHR) played an important role in the organization of the ASC hazard related exchange.
- WG-III: The CSEP WG led by Rhoades and Jackson made significant contribution to the 2008 Evison symposium in Wellington-NZ. And the CSEP project.

Also significant aids were provided to Chinese Seismological community in regard to the estimation of aftershock probabilities mainly contributed from IUGG Georisk commission, SHR CSEP WG and SHR-ASC WG.