

Activity Report of the

IASPEI/IAVCEI Inter-Association Commission on Volcano Seismology 2007 -2008

The fundamental aim of the commission is to promote volcano seismology as a tool to gain a better understanding of the dynamics of volcanoes and improve our ability to accurately predict their behaviour. The goals of the Commission are fivefold:

- (i) To facilitate collaborations among scientists and institutions investigating volcanic processes and structures.
- (ii) To facilitate the transfer of knowledge, tools and training between scientists and volcano observatories, especially in developing countries.
- (iii) To promote the use of state-of-the-art seismic equipment, such as broadband sensors and high dynamic range data loggers, in routine volcanic monitoring and seismic experiments.
- (iv) To promote conferences, seminars and high-level education aimed at familiarizing researchers with modern theoretical and experimental seismic methods used in the interpretation of volcanic processes and structures.
- (v) To promote funding from international organizations that could help affray travel and related expenses for the activities listed above.

To achieve these goals, several initiatives and activities have been carried out in the reporting period by commission members, and are grouped under the following topics:

1. **Workshops and Conferences:** In co-operation with the Working Group on Seismic Phenomena of Volcanic Activity of the European Seismological Commission two annual workshops were held in Nebud, Iceland and Leon, Nicaragua, respectively. The themes were: "Hot and Cold: Seismicity associated with geothermal areas and ice-covered volcanoes" and "Characterization of volcanic regimes using continuous seismic data... and possibly more!". These workshops attracted about 35 participants each from an international audience. To the second meeting in Nicaragua a participant from Guatemala was invited using the Bruno Martinelli Travel Fund, administered by the AGU. At the IAVCEI conference in Iceland, August 2008, two dedicated sessions were organized on Volcano Seismology, and on Multidisciplinary Monitoring and Modelling, respectively. Since summer 2008, Jeffrey Johnson, Dept of Earth & Environmental Science, New Mexico Tech, joined the Commission. Through his contributions the topics addressed by the Commission include now Infrasonic Signals as well, and workshops on this topic are planned. The Abdus Salam International Centre for Theoretical Physics is organizing a two-week Workshop on Evaluating, Monitoring and Communicating Volcanic and Seismic Hazards in East Africa to be held from August 17th to 28th, 2009, in Trieste, Italy. The workshop is co-sponsored by the US National Science Foundation, UNAVCO, IASPEI and IAVCEI, and Jurgen Neuberg is involved in this conference on behalf of the Commission.

2. **Educational material:** Hiro Kumagai wrote a book chapter of the fundamentals of quantitative volcano seismology entitled "Quantification of the Sources of Volcano-Seismic Signals" on behalf of our commission in "Encyclopedia of Complexity and Systems Science", which will be published in March 2009 by Springer-Verlag. Once reprints are available they will be distributed to volcano observatories, especially in developing countries. Jurgen Neuberg, in co-operation with Jo Wassermann, is re-writing the Chapter on Volcano Seismology in the IASPEI Seismological Manual.
3. **Website:** During the IAVCEI conference in Iceland, 2008, a Commission Meeting was held and major changes regarding the Commission's website have been decided and are being implemented. Two major changes concern the provision of more educational material in the form of on-line tutorials, as well as literature lists and re-prints of essential scientific articles for several topics concerning volcano seismology. This is an on-going effort and we hope that particularly volcano observatories in developing countries will benefit from the access of these materials.
4. **Core Members of the Commission include (2008):**
Prof. Jurgen Neuberg, UK (Joint Chair of the Commission)
Prof. Hiroyuki Kumagai, Japan (Joint Chair of the Commission)
Dr. Maurizio Ripepe, Italy
Dr. Peggy Hellweg, US
Prof. Steve McNutt, US
Prof. Jeffrey B. Johnson, US
Dr. Roberto Carniel, Italy
Dr. Art Jolly, New Zealand
Dr. Mario Ruiz, Ecuador
Dr. Philippe Lesage, France
Dr Brian Baptie, UK
Prof. Vyacheslav Zobin, Mexico

In the next future it is planned to recruit additional members from the Philippines, Indonesia and the African Continent.

Leeds, United Kingdom, December 12, 2008
Jurgen Neuberg