

Amended Activity Report 2007-2008

IASPEI Commission on Education and Outreach

This short report has been compiled by Peter Bormann on very short notice on request by the Secretary General of IASPEI, Prof. Peter Suhadolc, and the Commission Chairman, Dr. John Taber, who is unable to attend the CoEO meeting in Cape Town.

Compiled are pieces of information on past and planned activities, partially abridged, which have been made available to P. Bormann by 06 January. Another paragraph to this report has been contributed by Valiya Hamza in Cape Town and is now amended to this report.

1. Training in conjunction with the European Seismological Commission meeting

The ESC, with IASPEI financial support, has thus far sponsored seven training courses for Young Seismologists. The seventh course took place between 02 and 07 Sept. in Chania, Crete, prior to the ESC General Assembly 2008.

Topic of the course have been **Active Tectonics and Seismicity**, focussing on the geodynamics and structure of the Hellenic Arc, seismotectonics, active faulting, earthquake physics, macroseismology, microtremors, seismological networks, earthquake clustering, microzonation studies, and the principles of data collection.

Lecturers have been GA Papadopoulos, G. Hloupis, H. Kokinou, R. Console, P. Soupios, J. Makris, I. Cecic, I. Papadopoulos, V. Karastathis, DA Storchak and F. Vallianatos.

Part of the time was spent on **practical exercises** using the computer equipment provided by the Laboratory of Geophysics and Seismology of the Technological Educational Institute of Crete in Chania.

At the end of the course all the lectures were burned on a CDROM and distributed to the participants.

Thirty six students from nineteen countries attended the course. Questionnaires were distributed amongst the students. 31% of them rated the overall course as excellent, for 56% as very good and for 13% as good.

Based on the course report and rating the ESC Bureau endorsed a proposal to hold the **8th training course** before the next General Assembly in **Montpellier, September 2010**.

2. Training in conjunction with European Commission Projects

Courses have been developed and run in the framework of the EC-project SESAME (**Site Effects Assessment using Ambient Vibrations**) between 2001 and 2004, led by P.-Y. Bard. From this time on, the group decided to provide in-depth training to project partners. Since 2005 seven such SESARRAY courses of 5 to 7 days duration have been carried out.

The latter **4 courses** took **since the IUGG in Perugia**:

- 21.07.-26.07. 2007, Algiers, Algeria;
- 26.11.-01.12.2007, Bangalore, India;
- 26.05.-01.06.2008, Istanbul, Turkey;
- 06.12.-12.12.2008, Thessaloniki, Greece.

Details about the local organizers, hosting institutions, funding support, fees etc. have been provided to the IASPEI Secretary General by Matthias Ohrnberger. **Each course** has been attended by **14 to 17 participants**, in total from **22 countries**.

3. Training in conjunction with the Asian Seismological Commission meeting

The international Institute of Seismology and Earthquake Engineering (IIEES) held a two days training course on 23 and 24 November 2008 prior to the 7th General Assembly of the ASC. **Topic: Microtremor Array Exploration Techniques.** The course included lectures and practicals. A certificate was issued. **Participants: 10.**

(A report and future plans are not yet available).

4. Training organized by German Institutions

Two types of courses are currently organized and run by the **GFZ German Research Center for Geosciences:**

a) Regular annual 4-6 week International Potsdam Seismology Training Courses.

They are alternatively run every second year at Potsdam, Germany or in the host country of a developing region, rotating between Asia, Latin America and Africa/Near East. Each course comprises some 50% of lectures, 40% of practicals and 10% of workshop sessions with presentations by participants about their work. Additionally, 3-4 days of scientific excursions are scheduled. Participants from developing nations are fully sponsored, chiefly by the German Foreign Office and the GFZ, however, significant contributions are also made by UNESCO and other German and foreign sponsoring agencies. Courses run in Germany are also supported by the Federal Institute for Geosciences and Natural Resources (BGR), which offers a one-week specialization course for about half of the participants in the course (see below). For several years these courses had also received financial support by IASPEI Commission on Education and Outreach. Successful participation is acknowledged with a **Certificate**. Basic course material is the IASPEI New Manual of Seismological Observatory Practice, complemented by half a dozen of the leading text books in seismology, seismotectonics and hazard assessment. All lecture materials are made available to participants on CD ROM and DVDs.

b) Additional special 3-week courses on Seismology, Data Analysis and Tsunami Detection. Three of these courses have been run since January 2007 in Jakarta, Indonesia. The courses were designed in three consecutive levels of advancement (Background and Basics, Medium and Advanced Level) and were supposed to offer progressing qualification to the (ideally) some group of people in conjunction with the preparations for, implementation and operation of the German-Indonesian Tsunami Early Warning System (GITEWS). The courses have been financed by Indonesian and German institutions and received also some financial and lecture contributions from the United States Geological Survey.

Since Perugia **two regular courses** were carried on **Seismology, Seismic Data Analysis, Hazard Assessment and Risk Mitigation:**

1. Potsdam, Germany, 05 August to 08 September 2007, **25 participants** from **24 countries** have been selected out of 124 applications received from 55 countries; The lectures and practicals were presented by 29 lecturers from Germany (26), France, Italy and UK (1 each). All courses run in Germany allow for one specialization week. Whereas one group of participants focuses on direct and induced effects of strong earthquake ground motions, the other group is trained by specialists of the BGR at its (former) centralized observatory in Erlangen (see also extra paragraph below) in the operation of network centres and detailed data analysis at single stations, seismic

networks and arrays.

According to the answers of participants to a detailed questionnaire the course in 2007 achieved 91% of the maximum possible rating points.

2. Heredia, Costa Rica, 27 October to 28 November 2008. The course included a special one-day workshop “Seismology in Latin America” at which key seismologists of 10 Latin American countries provided overview lectures about the current state of seismology in their countries. **25 participants** from **13 Latin American and Caribbean countries** attended the course. The final report is not yet available.

Additionally, Part II and III of the special tsunami related courses were run in January/February 2007 and 2008.

Further, the **Federal Institute for Geosciences and Natural Resources (BGR)** has organized, financed and run in its own responsibility **two** highly intensive **1-week** international training **courses** in **February and March 2008**.

The course in March had be additionally arranged because of the great demand and large number of applications received for the first course. **Course Topic: Digital Seismogram Analysis** (from single stations, networks and arrays).

These courses have been attended by **20 participants each**, from different countries. **Lecturers** were Dr. Klaus Klinge and Dr. Klaus Stammler.

5. Training organized by United States agencies/institutions

The United States Geological Survey has been running final **US-ITOWS training courses** in **Thailand and Malaysia in August 2007**. On request of the USGS and with permission of P. Bormann copies of the IASPEI NMSOP on CD-ROM have been made available as background material to all participants in the course. No more information on the topic and number of participants has become available to the reporter.

The Data Management System (DMS) of the Incorporated Research Institutions for Seismology (**IRIS**) sponsored an **International Metadata Workshop** during **October 2007** near Kuala Lumpur, **Malaysia**. The course has been hosted by the Malaysian Meteorological Department and sponsored by the NSF through IRIS and co-sponsored by New Zealand’s GNS Science and Japan’s JAMSTEC/IFREE division. There were a total of **55 participants from 22 countries**.

6. Training organized by the China Earthquake Network Center (CENC) in Beijing

On invitation of, and fully financed by CENC, Peter Bormann and Klaus Klinge held an intensive training course at the premises of CENC in **Beijing** between **10 and 19 October 2008**. **Course Topic: Seismological Observatory Practice and Seismogram Interpretation**. **39 participants** from different Provincial Seismological Agencies of China attended the course. All lecture materials, analysis software used in the practicals and the Chinese edition of the IASPEI New Manual of Seismological Observatory Practice have been made available to all course participants.

7. Training organized by National Observatory, Ministry of Science and Technology, Brazil.

On invitation of the Geological Survey of Colombia (INGEOMINAS), and fully financed by the oil company ANH of Colombia, Valiya Hamza (Brazil) and Claudia Alfaro (Colombia) organized a short training course in Bogota (Colombia) between 10th and 22nd of November. Course Topic: "Thermal State of the Earth". 21 participants from INGEOMINAS, ANH and National University of Bogota attended the course. The course material was distributed to all participants. The activities carried out during the course also included practical demonstrations of temperature measurements in boreholes for determination of geothermal gradient, field measurements of thermal conductivity of core samples and infra-red imaging of thermal field in underground tunnels. A newly developed, highly compact and portable equipment system was used in geothermal measurements and data analysis. Data analysis included determination of geothermal gradients as well as reconstruction of the history of surface temperature changes induced by climate changes of the recent past. This system proved ideal for training in applied Geothermics.

8. Planned future activities

According to the chairman of IASPEI CoE&O, John Taber, the last few E&O sessions where attempts had been made to broaden the scope had not attracted very many abstracts. Therefore, it should be considered to focus the IUGG 2011 Melbourne the session on E&O more specifically on international training courses.

One major contribution to and tutorial resource for such courses could be the project of the IASPEI WG NMSOP_2, chaired by P. Bormann (see poster and CoSOI report 2009 in Cape Town). By the time of the Melbourne meeting the WG plans to have an essentially enlarged and upgraded website edition of the NMSOP ready and to present key features and new topics of this web edition in a special workshop session. The reporter proposes to organize this as a joint activity of CoSOI and CoE&O.

The GFZ plans for 2009 another regular 5-week course in Potsdam, Germany and in 2010 as a regional course in a country of Asia. An additional 3-week training course 2009 in China, sponsored by the German Foreign Office, is currently negotiated on request of and in co-operation with the China Earthquake Agency (CEA). Further courses on tsunami monitoring and early warning are envisaged in the near future in countries of the Indian Ocean region.

Matthias Ohrnberger reported that for the next future, the plan is to bring the contents of the SESARRAY courses on an e-learning platform through the University of Grenoble. This might reduce the number of courses from currently two per year to a single course per year, depending on demand. One course is already planned for the end of 2009 or the beginning of 2010 within the NERIES project. He also believes that short and intensive courses on specific topics like several ones present above, having a small teaching body of 3-4 persons, might prove to be especially helpful to the community in future. Therefore, IASPEI CoE&O might help in interesting small groups of distinguished lecturers around the world to offer such kind of courses upon request.

Kleinmachnow, 07 January and 04 March 2009

Reporter: Peter Bormann (on behalf and request of CoE&O)