

International Association of Seismology and Physics of the Earth's Interior

PRESIDENT

Prof. Stephan Mueller
Institut fuer Geophysik
ETH - Hoenggerberg
CH-8093 Zürich
SWITZERLAND

FIRST VICE-PRESIDENT

Prof. A. V. Nikolaev
Institute of Physics of the Earth
Academy of Sciences of USSR
Bolshaya Gruzinskaya, 10
Moscow 123 242
U.S.S.R.

SECOND VICE-PRESIDENT

Dr. E. R. Engdahl
U.S. Geological Survey
Denver Federal Center
P.O. Box 25046, Mail Stop 967
Denver, CO. 80225
U.S.A.

SECRETARY-GENERAL

Dr. R. D. Adams
International Seismological Centre
Pipers Lane, Thatcham
Newbury, Berks.,
UNITED KINGDOM RG13 4NS

Telephone: National (0635) 61022
International +44 635 61022
Telex: 849303 SEISMO G

NEWSLETTER NO. 23 FEBRUARY 1989

To: National Correspondents, Officers and Representatives of the
Association, and related organisations

We have all been saddened by the news of the major tragedy following the earthquakes in Armenia on 7 December 1988, and extend our sympathy to our Soviet colleagues. A feature of this earthquake has been the rapid availability of information from the disaster area, and the provision of facilities for visiting by non-Soviet specialists. It is sobering to realise, however, that the earthquake itself, of magnitude about 7, was not excessively large, and the devastation shows the need for continuing co-operation between seismologists and earthquake engineers. Although the programme for our Istanbul Assembly later this year is already full, we will make sure that there is time for additional sessions to discuss this event and its effects.

A further disaster in Tadzhikistan late in January 1989 appears to have arisen from a moderate earthquake triggering extensive landslides. This emphasizes again the need for the interdisciplinary approach to natural hazards that is one of the main features of the International Decade for Natural Disaster Reduction.

R. D. Adams

R. D. Adams
Secretary-General

FUTURE ASSEMBLIES

The Austrian Local Committee is already making detailed plans for the IUGG General Assembly in Vienna, 11-24 August 1991. The programme of IUGG Inter-Association Symposia will be decided by the IUGG Executive Committee in August 1989, after which we shall arrange our own IASPEI programme during our Istanbul Assembly.

Negotiations are still underway to arrange a Regional African Seismological Assembly in Nairobi in August 1990, and we are hopeful that this will take place, as a joint IASPEI/Unesco/ICL venture.

The venue for IASPEI's Assembly after Vienna, will be decided at Istanbul in August this year. So far, two invitations have been received, one from the Soviet Union for a meeting in 1993, and the other from New Zealand for a meeting at Wellington in the southern summer, early in 1994.

GENERAL ASSEMBLY, ISTANBUL, TURKEY. 21 AUGUST - 1 SEPTEMBER 1989

Unfortunately there has been a delay in the publishing of the Second Circular, which will not now be available before the beginning of February. Because of this, the deadline for submission of abstracts to Principal Convenors has been extended to 31 March 1989. If you have not returned the preliminary slip from the First Circular, please request the Second Circular from:

IASPEI Conference Organising Committee
Bayindirlik ve Iskan Bakanligi
Necatibey Caddesi 63
Ankara, Turkey. (Telex: 42477 AFET TR)

BUSINESS SESSIONS

This Assembly is primarily for scientific activities but formal plenary sessions will be held at the beginning and end of the Assembly. National Correspondents should take this Newsletter as formal notification of the meetings. Provisional agendas are given below, but any other matter may be raised if approved by a majority of delegates present. These meetings are open to all but voting on financial matters is restricted to accredited national delegates.

21 August (a.m.)	President's welcome Secretary-General's Statement Nomination of Resolution Committee
1 September (p.m.)	President's Report Secretary-General's Report Financial Statement Association and Commission Activities Union Activities Programme for 1991 Assembly, Vienna Venue for 1993/94 Assembly Adoption of Resolutions Other Business

Please note that this is not an Assembly at which elections are held for officers.

REGISTRATION FEE

Delegates	US \$150 before 30 April 1989 \$200 later
Accompanying persons	\$75 before 30 April 1989 \$125 later
Students	\$75

DEADLINES

31 March 1989 - Submission of abstracts to Principal Convenors
30 April 1989 - Registration at reduced fee

SCIENTIFIC SESSIONS

Details of these are given in previous Newsletters and the Second Circular. Please note that abstracts should be sent directly to the Principal Convenors, and not to the Local Organizing Committee or to the IASPEI Secretariat. Additional scientific sessions are likely to be arranged to discuss the Armenian earthquake of 7 December 1988.

IUGG ACTIVITIES

The President of IUGG, Professor Keilis-Borok, called a meeting at the end of November 1988, of the IUGG Bureau, the Presidents of the Associations and some other selected Union officials. This was an opportunity for the Presidents, who were elected in 1987 and form the nucleus of the IUGG Executive Committee, to get to know each other and have informal discussions on Union affairs before the meeting of the Executive Committee in August 1989.

The meeting was held under the auspices of the International Centre for Theoretical Physics near Trieste, Italy. Unfortunately, our President, Prof. Stephan Mueller, was unable to be present so IASPEI was represented by the Secretary-General, Dr. Adams.

Initially, there were contributions from each participant, mainly of their personal interests and those of their Association, but much general discussion also evolved. During this, there was discussion on the place of geochemistry in the Union, and Prof. Aramaki (IAVCEI) stressed that his Association was interested in the chemistry of the deeper parts of the Earth and they wished to work with IASPEI on these problems. IAVCEI, like IASPEI, shows great interest in the International Decade for Natural Disaster Reduction. Also of interest to IASPEI was Prof. D. J. Doornbos' explanation of the inter-Association Study of the Earth's Deep Interior (SEDI) and in particular the International Seismological Observing Period.

Preliminary ideas were discussed for Union Projects and activities at the 1991 General Assembly. Most Associations want to hold strong programmes of their own activities, but two types of Union meetings were proposed. One concerned general broad topics of geophysical interest, and the other specialised inter-Association sessions on particular topics. It is planned to hold both types of sessions at the 1991 Assembly in Vienna.

INTERNATIONAL DECADE FOR NATURAL DISASTER REDUCTION

Following the Ninth World Conference on Earthquake Engineering in Japan in August 1988, a joint committee has been set up between IASPEI and the International Association for Earthquake Engineering to co-ordinate the activities of the two bodies in relation to IDNDR. Its composition, which reflects geographical distribution as well as professional interest is:

Prof. G.W. Housner (USA - IAEE) Chairman
Prof. E.G. Kausel (Chile - IASPEI)
Prof. J. Petrovski (Yugoslavia - IAEE)
Prof. T. Toki (Japan - IAEE)
Prof. Lili Xie (China - IASPEI)

A further member may be appointed from the International Society for Soil Mechanics and Foundation Engineering.

It is pleasing to note this joint activity, for IASPEI and IAEE have worked together closely in the past, particularly in joint advisory groups to Unesco.

In addition, our President has set up an IASPEI Committee for IDNDR, which in addition to Profs. Kausel and Xie, comprises Prof. B.A. Bolt (USA, Chairman), Dr. M.J. Berry (Canada) and Dr. V. Karnik (Czechoslovakia). Prof. Bolt and Dr. Berry are Chairmen of the IASPEI Commissions most closely involved with the Decade.

TRAINING COURSE FOR AFRICAN SEISMOLOGICAL OBSERVERS

This course, jointly organised by IASPEI, Unesco and ICL was held at Lusaka, Zambia, 14-30 September 1988. The course was supervised by Dr. S.E. Pirhonen, with generous financial support from the Finnish agency FINNIDA, and local facilities provided by the Geological Survey Department of Zambia. The course was attended by 32 participants from 15 central and southern African countries. There were eight instructors from outside Africa, and three from African networks who provided valuable local expertise.

The course developed from a simple introduction during the first few days, through detailed recording and analysis of analogue systems during the second week to explanation and demonstration of digital methods in the final week. The mornings were devoted to semi-formal instruction, and in the afternoon sessions participants were divided into three groups for practical instruction in instrumentation, analysis and the use of personal computers. Visits were also made to the Lusaka seismograph station and to a seismic monitoring network at Itzhi-Tezhi dam, about 300km west of Lusaka.

In addition to the technical value of the course, there was an opportunity for working seismologists within Africa to get to know each other personally and to make arrangements for further collaboration.

The opportunity was taken during the course to hold a meeting of the IASPEI/Unesco/ICL Working Group for Seismology and Related Sciences in Africa, which was also attended by representatives of Unesco's Regional Office for Science and Technology in Africa.

WORKING GROUP ON SEISMIC REGIONALISATION

Some members of this Group of the Commission on Practice met late in 1988 to review progress since Vancouver and to draw up a work plan for 1989. Mr. J.B. Young (UK) has joined Dr. E.A. Flinn (USA) as co-chairman.

The group's task is to develop modern regionalisation for the Earth, based on the current Flinn-Engdahl scheme which has been in use for over 20 years. The present Geographic and Seismic Regions will remain, with some corrections, and then the present F-E regions will be further sub-divided into closed loop polygons to define political, geographic and tectonic features. Other classifiers may be added later.

NATURAL HAZARDS SOCIETY

A new International Society for the Prevention and Mitigation of Natural Hazards was formed in August 1988 at the Natural Hazards Symposium in Mexico. Its aim is to promote the study of all aspects of natural hazards, the distribution of preparedness and emergency-response plans and the formulation and implementation of education programmes on hazard prevention and mitigation. The society sponsors the journal Natural Hazards, and plans to hold at least one international scientific meeting every two years, in addition to co-sponsoring other meetings. Subscriptions are US \$20, or \$5 for students. The President is Prof. M.I. El-Sabh (Canada) and the Secretary is Dr. T.S. Murty, P.O. Box 6000, Sidney, B.C. Canada V8L 4B2.

OBITUARY - DR. E. M. FOURNIER D'ALBE

Dr. Michael Fournier d'Albe (or Fournier as he was known to close colleagues), died suddenly at his home in Normandy on 19 August 1988, aged 68.

He is known to seismologists for the major contributions he made to our science as the first Director of the Earth Science Division of Unesco, but his early training and research were in atmospheric physics. In 1951 he was recruited as part of a three-man team to help the Pakistan Meteorological Service initiate work in seismology, geomagnetism and atmospheric physics. This team set up headquarters at Quetta, on the site of a brewery destroyed by the disastrous earthquake of 1935, and for the next three years Michael carried out a well-controlled series of experiments in cloud seeding, which demonstrated, however, that in this area the techniques were not economically viable.

After joining Unesco in 1955/56, he gave great impetus to international seismology by arranging for a series of high-level missions to seismologically under-developed parts of the world, and helped to establish a seismological centre in South America, the International Institute of Seismology and Earthquake Engineering in Japan, the Balkan Seismological Project and re-vitalised recording networks in South East Asia. He organised several major inter-governmental meetings on seismology and earthquake hazard and was largely instrumental in the establishment of the International Seismological Centre under its present constitution. Although retired at the time of his death, he was still actively engaged in advising Unesco and UNDRO, particularly on plans for the International Decade of Natural Disaster Reduction.

Michael will be sorely missed by us all as a skilled diplomat, a valued colleague and above all as an understanding and helpful friend.

H.I.S. Thirlaway/R.D. Adama

INTERNATIONAL HEAT FLOW COMMISSION

Meetings on the "Current State of Geothermal Research in Latin America" were held in Ecuador, 10-16 October 1988 and during the Latin American Geological Congress in Brazil in November 1988. IHFC cosponsored with the Geothermal Research Society of Japan, an International Symposium on Geothermal Energy: Exploration and Development of Geothermal Resources, 10-14 November 1988 at Kumamoto and Beppu in Japan. There were about 220 specialists from Japan, as well as about 80 overseas participants. Extended abstracts of about 120 papers were pre-published and there were exhibitions of equipment, books and maps concerned with geothermal resources.

Heat flow specialists of South East Asian countries were called together for a workshop in Thailand, 17-19 November 1988 by the Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (CCOP). In addition to reviewing the state of heat flow investigation in South East Asia, the meeting discussed methods of heat flow data acquisition and interpretation, and tectonics and resource assessment. Proceedings will be published by CCOP in 1989.

Good progress is being made in the preparation of "Geothermal Atlas of Europe", which will consist of 36 maps and about 300 pages of explanatory text. Eleven maps on a scale 1:2,500,000 and five at 1:5,000,000 are now ready for printing. The first few printed sheets will be presented at the International Geological Congress in USA, in August 1989, and the whole atlas is scheduled for publication in 1990.

IASPEI SOFTWARE

The Working Group on Personal Computers of the Commission on Practice is marketing seismological software through the Seismological Society of America. The Group, which is chaired by Dr. W.H.K. Lee, with an advisory board chaired by Prof. Hiro Kanamori, plans to publish several volumes of seismological software during 1989 for IBM and compatible personal computers.

The first volume consists of several programs for acquisition, processing and analysis of local seismic network data, both for realtime operation and offline analysis. It is capable of digitising 16 analogue channels at up to 500 samples per second, and automatically picking P arrivals, locating the earthquake and saving the digitised waveforms. It also has an offline package for interactive processing such as location, filtering, Fourier spectra and coda Q analysis.

The second volume consists of programs for plotting data on screens or generating print-out suitable for seismicity plots, record sections etc.

Each volume will include the executable code and examples on standard floppy diskettes and printed documentation. The regular cost is \$250 for each volume. Prior to publication SSA members may order one copy for personal use at \$50 and institutions may place pre-publication orders at \$150 each.

For technical information consult: Dr. W.H.K. Lee
US Geological Survey
345 Middlefield Road, MS 977
Menlo Park, CA 94025, USA.

and for ordering purposes: Seismological Society of America
201 Plaza Professional Building
El Cerrito
CA 94530, USA.

PUBLICATIONS

"Seismological Algorithms" edited by D.J. Doornbos for the Sub-Commission on Algorithms is now available from Academic Press, with an associated package of programs. Royalties from this publication will come to IASPEI. Academic Press also has available "Seismic Strong Motion Synthetics" edited by B.A. Bolt, and "Historical Seismograms and Earthquakes of the World" edited by W.H.K. Lee, H. Meyers and K. Shimazaki.

The International Heat Flow Commission has published comprehensive guidelines and recommendations in a "Handbook of Terrestrial Heat-Flow Density Determination" edited by R. Haenel, L. Ryback and L. Stegena, and published by Kluwer Academic Publishers.

EUROPEAN SEISMOLOGICAL COMMISSION

The ESC held its General Assembly at Sofia, Bulgaria, 23-27 August 1988. Eight specialised symposia were held, in addition to meetings of Sub-Commissions and Working Groups. Officers were elected as follows:

President: C. Morelli (Italy);
Vice-Presidents: P.W. Burton (UK), L. Christoskov (Bulgaria)
Secretary-General: D. Mayer-Rosa (Switzerland)
Assistant Secretary-General: A. Roca (Spain)

The next Assembly will be held 17-22 September 1990 at Barcelona, Spain.

INTERNATIONAL ASSOCIATION FOR EARTHQUAKE ENGINEERING

The Ninth World Conference on Earthquake Engineering was held by IAEE in Japan, 2-9 August 1988, attended by nearly 1800 technical participants from 55 countries. Among those attending was our President, Prof. Stephan Mueller.

Themes of particular interest to IASPEI were: Seismicity and seismic risk; Ground motion and local effects; Earthquake damage.

The new President is Dr. G. Grandori (Italy). Dr. T. Katayama replaces Dr. Y. Osawa as Secretary-General. IASPEI thanks Dr. Osawa for his co-operation during his term of office and we look forward to working with Dr. Katayama. The Tenth World Conference will be held in July, 1992 at Madrid, Spain.

COMMISSION ACTIVITIES AT TOKYO

The Second Workshop on Processing Seismic Strong Motion Records was held during the Ninth World Conference on Earthquake Engineering in Tokyo, in August 1988, arranged by the Commission on Strong Motion Seismology.

The meeting was attended by about 60 participants, who presented some 15 papers, using various methods of analysis of strong-motion records. All participants were asked to display the results of the time histories and response spectra on the same scale so that direct comparisons could be made with overlays. A further workshop on "Site Specific Ground Motion for Large Earthquakes" is being held at Istanbul.

The joint IASPEI/IAEE Working Group on the Effects of Surface Geology on Seismic Motion also held a workshop during the Tokyo Conference, and the Proceedings have already been circulated. This group is actively proceeding with experiments in the prediction of ground motion at the Turkey Flat site in California and in Ashigara Valley in Japan. The group will meet again at the Istanbul Assembly to review progress.

REVISION OF TRAVEL TIMES

A workshop of the Sub-Commission on Algorithms was held in Colorado in October 1988 to establish a framework for the construction of new global earthquake travel times. The meeting was sponsored by IASPEI, Unesco and USGS and the convenors were Prof. B.L.N. Kennett (Australia) and Dr. E.R. Engdahl (USA).

The new tables will be represented by a radially stratified Earth model with isotropic properties, giving as good a fit as possible to teleseismic observations of P, S and core phases from the ISC bulletins, with an associated set of station corrections. In addition use will be made of readings from a limited number of well located test events. The group hopes to present interim tables at the Istanbul Assembly in 1989, and to have the final version ready for consideration at the Vienna Assembly in 1991.

FORTHCOMING MEETINGS

- 1989 Mar 6-8 AFRO-ARABIAN RIFT SYSTEM
Karlsruhe, FRG
U Achauer, Geophysical Institute, Karlsruhe University,
7500 Karlsruhe 21, FRG.
- 1989 Mar 27 - STRESS, STRENGTH AND VISCOSITY IN THE LITHOSPHERE
Apr 2 Potsdam, German Democratic Republic
Prof. E. Hurtig, ZIPE, Potsdam, DDR 1561, GDR
- 1989 Apr 13-14 SEISMICITY, SEISMOTECTONIC AND SEISMIC RISK OF THE
IBERO-MAGHREBIAN REGION
Madrid, Spain
Catedra de Geofisica, Universidad Complutense, 28040 Madrid,
SPAIN
- 1989 Jul 4-7 2nd INTERNATIONAL CONGRESS ON DISASTERS
Havana, Cuba
Palacio de las Convenciones
Apartado 16046, Havana, CUBA
- 1989 Jul 9-19 28th INTERNATIONAL GEOLOGICAL CONGRESS
Washington, DC, USA
IGC, P.O. Box 1001, Herndon, VA., 22070, USA
- 1989 Aug 2-4 PREPAREDNESS, MITIGATION AND MANAGEMENT OF NATURAL DISASTERS
Roorkee, India
Dr. R.C. Agrawal, Dept. of Earthquake Engineering, University
of Roorkee, Roorkee 247 667, INDIA
- 1989 Aug 21 - 25th GENERAL ASSEMBLY, IASPEI
Sep 1 Istanbul, Turkey
IASPEI Conference Organization Committee, Bayindirlik ve
Iskan Bakanligi, Necatibey Caddesi 63, Ankara, TURKEY
- 1989 Sep 4-9 4th INTERNATIONAL SYMPOSIUM ON ANALYSIS OF SEISMICITY AND
SEISMIC RISK
Bechyne, Czechoslovakia
Dr. Z. Schenkova, Geophysical Institute, Bocni II,
14131 Prague 4, CZECHOSLAVAKIA
- 1989 Oct GEODESY AND SEISMOLOGY : DEFORMATION AND PROGNOSIS
Erevan, Armenian SSR, USSR
V. A. Sidorov, Soviet Geophysical Committee, Molodezhnaya 3
Moscow 117296, USSR.
- 1989 Nov 20-24 FIRST CONGRESS BRAZILIAN GEOPHYSICAL SOCIETY
Rio de Janeiro, Brazil
Marco Polo P. da Boa Hora
PETROBRAS/DEPEX/SEMEPO
Caixa Postal 15541
20 132 Rio de Janeiro, BRAZIL
- 1990 Jul 2-6 4th INTERNATIONAL WORKSHOP ON SEISMIC ANISOTROPY
Edinburgh, U.K.
J. Lovell, B.G.S., Murchison House, West Mains Road,
Edinburgh, EH9 3LA, U.K.
- 1990 Sep 17-22 EUROPEAN SEISMOLOGICAL COMMISSION
Barcelona, Spain
Dr. A. Roca, Geological Survey of Catalunya, Diputacia 92,
08015 Barcelona, SPAIN
- 1991 Aug 11-24 XX GENERAL ASSEMBLY, IUGG
Vienna, AUSTRIA