



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



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## NEWSLETTER No. 30 - NOVEMBER 1991

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

Every four years IASPEI holds a General Assembly with the IUGG. These assemblies offer opportunities not only to arrange scientific activities on our own, but also to join the other IUGG Associations and the Union in interdisciplinary sessions. At Vienna a full program of scientific sessions was offered and much of this Newsletter is devoted to a report of that Assembly. In spite of the difficulties caused by the last-minute loss of the IASPEI venue for this assembly, our special thanks go to the Local Organizing Committee for helping to organize a meeting that will be memorable for its scientific achievements and the fine hospitality of the Viennese people. I would remind recipients of the Newsletter, particularly National Correspondents, that circulation is rather limited, and they should therefore distribute the information contained in it as widely as possible among their colleagues. I would like also to take this opportunity to thank Robin Adams for his twelve years of outstanding service to the Association as Secretary-General. As the new Secretary-General, I look forward to working with you during the next four years, in what appears to be an increasingly active period for the Association.

E. R. Engdahl  
Secretary-General

## GENERAL ASSEMBLY, VIENNA, AUSTRIA, 11-24 AUGUST 1991

The 26th General Assembly of IASPEI was held at the Technical University of Vienna, Vienna, Austria, 11-24 August, 1991, in conjunction with the 20th General Assembly of the International Union of Geodesy and Geophysics. There were 4331 registrants at the IUGG Assembly, of which 646 were affiliated with IASPEI.

### *OPENING PLENARY SESSION, 12 AUGUST 1991*

Present: Prof. St. Mueller (President) in the Chair and about 120 delegates and guests.

The President expressed disappointment that circumstances had forced the Local Organizing Committee to move IASPEI's venue to the Wirtschafts-Universitaet at short notice, because of unavoidable construction work at the original site in Getreidemarkt, but hoped the success of the Assembly would not be affected. He then read the names of scientists associated with IASPEI who had died since the assembly in Istanbul in 1989. These were:

V.V. Belousov (USSR)  
V. Bune (USSR)

R.E. Hansen (USA)  
J.-P. Rothé (France)  
J.-M. van Gils (Belgium)

Delegates stood in remembrance.

The Secretary-General, Dr. R.D. Adams, then tabled his report, which had already been published in the Newsletter, and would be discussed in more detail at the Second Plenary Session. He also presented the accounts for consideration by the Audit Committee. These accounts would also be discussed fully at the Second Plenary Session.

Prof. Mueller then announced the composition of the following committees, the first named being the chairman of each:

Nominating Committee:	Prof. Z. Suzuki, Prof. H. Berckhemer, Prof. B.A. Bolt, Dr. A.D. Gvishiani, Prof. E. Kausel
Resolutions Committee:	Prof. A.V. Nikolaev, Dr. P.W. Basham, Prof. C. Froidevaux, Prof. V.K. Gaur
Audit Committee:	Dr. J. Hjelme, Dr. J. Vanek

There being no additional business, Prof. Mueller then called on Prof. B.A. Bolt to present the report of the IASPEI Committee for the International Decade for Natural Disaster Reduction. Prof. Bolt described the broad inter-commission program envisaged by IASPEI and announced that the State Seismological Bureau in Beijing had offered to host an IASPEI Secretariat for IDNDR with basic funding.

This topic led on to the Association Lecture, “Losses from Natural Hazards can be Reduced,” given by Dr. R.M. Hamilton, now seconded from the U.S. Geological Survey to the United Nations Office for IDNDR in Geneva, where he is currently Acting Director. Dr. Hamilton first described the administrative arrangement of committees within the United Nations system for IDNDR, from the High-Level Committee, through to the Science and Technology Committee, and liaison with individual country programs. He then described some steps that could be taken to reduce natural hazards, and gave examples from the Loma Prieta earthquake in north California in 1989.

Following a short break, Prof. A.V. Nikolaev assumed the chair, and introduced the retiring President, Prof. St. Mueller, who delivered his Presidential Address, “Towards a Better Understanding of Crustal Dynamics.” He explained that recent detailed seismic reflection and refraction measurements combined with deep electromagnetic soundings in selected segments of the “European Geotraverse” demonstrated that there exists a very effective detachment zone in the middle crust (at depths between 10 and 20 km). It is characterized by a decrease in both P- and S-wave velocities as well as a reduction of the apparent electrical resistivity due to fluid-rock interaction. This zone is also a range of lowered mechanical strength, thus producing “gaps” in the depth distribution of earthquakes. Contrary to the general belief that the lower crust is “ductile” it could be shown that earthquakes also occur in the lower crust all the way down to the crust-mantle boundary. The pattern described has been found in regions of active rifting, uplift, subsidence, and continental collision. It provides an explanation of the observed deep-reaching tectonics and the associated seismic activity.

The meeting closed at 1200.

### ***SCIENTIFIC PROGRAM***

In the course of the Assembly the following scientific sessions were held. Business sessions were also held by all IASPEI Commissions.

*Association Lecture*

12 Aug. "Losses from Natural Hazards can be Reduced" - Dr. R.M. Hamilton

*IUGG Symposia with IASPEI Leadership*

20 Aug. Structure Beneath Marginal Sea Basins. Convenor: H. Shimamura (Japan)

*IUGG Symposia with IASPEI Participation*

14-15 Aug. Jeffreys Symposium: Interrelation Between Geophysical Structures and Processes.  
Convenor: K. Aki (USA)

14-15 Aug. Application of Gravimetry and Space Techniques to Geodynamics and Ocean  
Dynamics. IASPEI Representative: C. Froidevaux (France)

16 Aug. Major Puzzling Problems or Paradoxes in Contemporary Geophysics.  
IASPEI Representative: E. Nyland (Canada)

16 Aug. The Application of Topographic Databases to Geodynamic Prediction and  
Interpretation. IASPEI Representative: Y. Ricard (France)

16, 19-20 Aug. Dynamics of the Earth's Deep Interior and Earth Rotation.  
IASPEI Representative: K. Lambeck (USA)

20-21 Aug. Non-Linear Dynamics and Predictability of Critical Geophysical Phenomena.  
IASPEI Representative: J. Lomnitz-Adler (Mexico)

22 Aug. Water and Ice as Geophysical Agents.  
IASPEI Representative: A.M. Nur (USA)

22 Aug. Chemical Evolution of the Earth and Planets.  
IASPEI Representative: R. Jeanloz (USA)

*IASPEI Symposia*

13-15 Aug. Earthquake Hazard and Risk.  
Convenors: P.W. Basham (Canada), D.D. Jackson (USA)

13-16 Aug. Plate Tectonic Signatures in the Continental Lithosphere / Global Geoscience  
Transects Project - GGT (Joint with ICL/ILP). Convenors: A.G. Green (Canada),  
A. Kroner (Germany), N.I. Pavlenkova (USSR), H.-J. Gotze (Germany).

14-15 Aug. Earthquake Sources. Convenors: J.L. Nabelek (USA), G. Ekstrom (USA)

15-16 Aug. Physical Processes in the Deformation of the Lithosphere: Observations, Laboratory  
and Numerical Modelling (Joint with ICL). Convenors: B.H. Hager (USA),  
S. Cloetingh (The Netherlands), J.-P. Vilotte (France).

16 Aug. Lateral Heterogeneity and Earthquake Location (Joint with ICL).  
Convenors: D. Giardini (Italy), E.R. Engdahl (USA), B.L.N. Kennett (Australia).

16 Aug. Application of Strong Motion Records to Seismological Problems.  
Convenors: B.A. Bolt (USA), G.F. Panza (Italy), E. Shima (Japan)

19-20 Aug. Heat Flow, Rock Mechanics and Seismicity.  
Convenors: G. Ranalli (Switzerland), T. Seno (Japan), T.E. Tullis (USA)

19-20 Aug. Tsunami Disaster Reduction (Joint with IUGG Tsunami Commission, IAPSO).  
Convenors: E.N. Bernard (USA), N. Shuto (Japan), S. Tinti (Italy).

20-21 Aug. Physical Properties of the Earth's Interior: Mantle to Core (Joint with SEDI).  
Convenors: T.J. Ahrens (USA), J.-P. Poirier (France), T. Yagi (Japan).

21 Aug. Shear Waves and Shear-Wave Splitting.  
Convenors: J.P. Montagner (France), S. Crampin (UK), L.P. Vinnik (USSR)

22-23 Aug. Progress in the Seismic Interpretation of Complex Structures. Convenors: B.L.N.  
Kennett (Australia), G. Nolet (The Netherlands), W.D. Mooney (USA)

Convenors' summaries of these sessions will be published in the IUGG Chronicle.

*Other IASPEI Meetings*

The following pre-Assembly workshops were held in Weilburg, Germany:

- 6-8 Aug. Numerical Modelling of Mantle Dynamics.  
Convenors: H. Schmeling (Germany), U. Christensen (Germany)
- 8-11 Aug. Numerical Modelling of Lithospheric Deformations.  
Convenors: K. Furlong(USA), J.P. Vilotte (France)

The following workshops/working group meetings were held during the Assembly:

- 13 Aug. Workshop on the Ocean Seismic Network.  
Convenors: A.M. Dziewonski (USA), G.M. Purdy (USA)
- 14 Aug. Workshop on Earthquake Risk. Convenor: K.V. Steinbrugge (USA)
- 14 Aug. Workshop on Seismicity Patterns. Convenor: K. Hamada (Japan)
- 15 Aug. Working Group on Modelling the Earthquake Process.  
Organizer: C.H. Scholz (USA)
- 15 Aug. Working Group on the Vrancea Project.
- 15 Aug. Workshop on World-Wide Assessment of Seismic Hazard Techniques.  
Convenor: R.K. McGuire (USA)
- 15-16 Aug. Workshop on Case Histories of Earthquake Precursors. Convenor: M. Wyss (USA)
- 16 Aug. Workshop on Time-Dependent Earthquake Hazard.  
Convenor: J. Lomnitz-Adler (Mexico)
- 16 Aug. Workshop on Crustal Deformation. Convenor: J. Zschau (Germany)
- 16 Aug. Workshop on Earthquake Prediction Based on Combined Parameters.  
Convenor: G.A. Sobolev (USSR)
- 19 Aug. Working Group on Seismic Regionalization. Organizer: J.B. Young (UK)
- 19 Aug. Working Group on Lithosphere-Asthenosphere Studies (Joint with IAGA).
- 19-20 Aug. Workshop on the Estimation of Earthquake Size.  
Convenors: S.J. Duda (Germany), T.B. Yanovskaya (USSR), G. Choy (USA)
- 19-20 Aug. Workshop on the Analysis of Digital Seismograms.  
Convenors: A. Plesinger (Czechoslovakia), D. Seidl (Germany), S. Sipkin (USA)
- 19-20 Aug. Workshop on Applications of Personal Computers in Geophysics.  
Convenor: W.H.K. Lee (USA)
- 19-20 Aug. Workshop on Electrical and Seismic Properties of the Lithosphere and Their Interpretation in Terms of Physical State and Petrology (Joint with IAGA).  
Convenors: I.S. Sacks (USA), S.Sobolev (USSR), L. Vanyan (USSR).
- 20 Aug. Workshop on Global and Local Geophysical Networks  
Convenor: A.V. Nikolaev (USSR)
- 20 Aug. Workshop on Structured Databases in Solid Earth Geophysics (Joint with ICL).  
Convenors: J. Bonin (France), A.D. Gvishiani (USSR), R. Masse (USA)
- 20 Aug. Workshop on Evaluation of Methods of Interpretation of Heat Flow Data /Climate Change Recorded in Subsurface Temperatures.  
Convenors: A.E. Beck (Canada), D.S. Chapman (USA), J.Y. Wang (China) / H.N. Pollack (USA), V. Cermak (Czechoslovakia)
- 21 Aug. Workshop on the International Seismological Observing Period (Joint with SEDI and ICL). Convenor: E.R. Engdahl.
- 22 Aug. Workshop on Electromagnetic Methods of Natural Disaster Warning (Joint with IAGA)  
Convenors: M.B. Gokhberg (USSR), M.J.S. Johnston (USA), M. Parrot (France).
- 22 Aug. IASPEI/UNESCO/ICL Working Group on Seismology and Related Sciences in Africa.  
Organizer: H.K. Gupta (India)

22 Aug.

Working Group on Seismo-Electromagnetic Effects (Joint with IAGA).

### ***CLOSING PLENARY SESSION, 21 AUGUST 1991***

Present: Prof. St. Mueller (President) in the Chair and about 100 delegates and guests.

The President opened the meeting at 1800, and after welcoming participants, reported that the Association had held a General Assembly at Istanbul in 1989 and a Regional Seismological Assembly in Africa at Nairobi in 1990, and gave brief details of other commission and smaller meetings. He referred to the good relationship with UNESCO and ILP, particularly in the holding of the Nairobi Assembly.

#### ***SECRETARY-GENERAL'S REPORT***

The Secretary-General reported that the Bureau had met in Istanbul in August 1989, and in Nairobi in 1990. He thanked the International Seismological Centre for their help in hosting the Association's Secretariat during the last twelve years.

Other items mentioned in his report, which had previously been published in the IASPEI Newsletter, would be covered in later points on the agenda.

#### ***FINANCIAL STATEMENT AND DISCHARGE OF ACCOUNTS***

Dr. Adams presented the Association's Accounts and Financial Report for the period 1987-1990. During this period, there had been a major change in the sources of income received. Contracts from UNESCO had been reduced, but, fortunately, these were offset by grants received through ICSU from the U.S. National Academy of Sciences who supported activities related to UNESCO's Natural Hazards programme. These grants have totalled \$135,000 for the period, and have enabled the Association to maintain its activities at about the same level.

Our other significant new source of income is that from royalties from publication of proceedings of IASPEI symposia. Over \$18,000 was received in 1990 for sales arising from the 1987 General Assembly. This source of income is expected to continue, but at varying levels depending on the timing of Assemblies. Proceedings from the 1989 General Assembly are now in press, and a volume containing papers from the 1990 African Regional Assembly is in an advanced stage of preparation. We also receive income from the sale of the Handbook of Algorithms.

More than \$285,000, or 85% of our total expenditure, has been on Assemblies and Scientific Meetings. Administration costs remain low at about 8 1/4% of expenditure.

Dr. J. Hjelme, Chairman of the Audit Committee, then gave a brief report accepting the accounts and giving the Secretary-General discharge.

#### ***IUGG ACTIVITIES***

Prof. Mueller then reported on Union Activities. The Union Committee on Developing Countries had been disbanded and our own committee created.

A new Union Committee on Geochemistry was being set up under the initiative of Prof. Lal, and the Association would need to appoint a representative on this.

The Union's Committee for IDNDR was being continued under the Chairmanship of Prof. Keilis-Borok. IASPEI was represented on this committee by Prof. C. Kisslinger.

Prof. Kisslinger then reported on the formation of a Union Committee on Exploration Geophysics in which IASPEI should play a major role.

Prof. Mueller informed the meeting that the Council has already recommended the following IUGG officers:

President:	Prof. H. Moritz (Austria)
Secretary-General:	Dr. G. Balmino (France)
Treasurer:	Dr. S. Gregersen (Denmark)

The remaining officers would be elected at the Council Meeting on 23rd August.

The President also announced that the IUGG Executive would be recommending to the Council that at future IUGG Assemblies a surcharge of \$20 be put on the registration fee. Funds raised in this way would be allocated directly to the Associations concerned.

### *RELATIONS WITH UNESCO*

Dr. Adams reported that although UNESCO had been forced to reduce significantly its grants to the Association, there was still much collaboration, a particular example being the joint IASPEI/UNESCO/ICL Regional Seismological Assembly in Africa held in 1990. Dr. Adams also pointed out that UNESCO supported many IASPEI-related projects with direct contracts with the scientists concerned.

### *ASSOCIATION ACTIVITIES*

The President then announced the commission chairmen for the next period. It was noted that the Commission on Strong Ground Motion has been transferred to a Sub-Commission of the Commission on Earthquake Hazard and Prediction, and that Prof. Xie Li-Li would be a suitable person to chair this group. The Committee for the International Decade for Natural Disaster Reduction was given commission status, and, in addition, a Committee for Developing Countries was set up as requested by the Union. The commissions and their chairmen as follows:

- Commission on Controlled Source Seismology – Dr. D.M. Finlayson
- Commission on Earthquake Hazard and Prediction – Prof. G.A. Sobolev
- Commission on Geodynamics and Tectonophysics – Prof. C. Froidevaux
- International Heat Flow Commission – Prof. H.N. Pollack
- Commission on Physical Properties of Material of the Earth's Interior – Prof. J.-P. Poirier
- Commission on Practice – Prof. E.A. Okal
- Commission on Wave Propagation – Prof. B.L.N. Kennett
- European Seismological Commission – Dr. L. Waniek
- Federation of Digital Broad-Band Seismograph Networks – Prof. A.M. Dziewonski
- Commission for International Decade for Natural Disaster Reduction – Prof. B.A. Bolt
- Committee for Developing Countries – Dr. R.D. Adams

The President reported that the International Committee for Earth Sciences in Africa (ICESA) was interested in extending its links within the Union. He had discussed this important matter with the Presidents of IAG, IAVCEI, and IAGA who had expressed interest in also being associated with ICESA. In the meantime, ICESA would continue with temporary commission status within IASPEI.

### *PUBLICATIONS*

Proceedings of assembly symposia were continuing to be published by Elsevier, raising substantial income for the Association. There had, however, been criticism of the delay in publication, but, at this assembly, Elsevier had confirmed that for future issues the publication time would not exceed six months. They requested, however, that IASPEI authors, reviewers, and guest editors try also to reduce

delays in preparing acceptable text. It was noted with pleasure that the publication of IASPEI Software by a working group chaired by Dr. W.H.K. Lee was continuing, with three volumes now available and a fourth imminent. Enough copies had now been sold for this project to be financially viable. A working group under Prof. O. Kulhanek had published a manual of seismogram interpretation called "Anatomy of Seismograms." The IASPEI Travel Time Tables edited by Prof. B.L.N. Kennett had also appeared and were on general sale.

#### *FUTURE ACTIVITIES AND ASSEMBLIES*

The President confirmed that the 27th General Assembly of IASPEI would be held in Wellington, New Zealand, in January 1994. Prof. J. Ansell gave a brief description of the facilities that would be available.

It was likely [later confirmed] that the 1995 IUGG General Assembly would be held in Boulder, Colorado, U.S.A., and that the U.K. would invite the 1999 IUGG General Assembly to be held there.

There had, as yet, been no offers to host the 1997 IASPEI General Assembly.

Although there would be no major assembly in 1992, there would be several activities in which the Association was involved, including a symposium organized by the Commission on Controlled Source Seismology, to be held in Banff, Canada, and a second International Symposium on Continental Seismicity to be held in Beijing.

#### *ELECTION OF OFFICERS FOR 1991-1995*

Prof. Suzuki, Chairman of the Nominating Committee, then explained the criteria by which the Nominating Committee chose candidates, and proposed a slate of officers. There being no further nominations from the floor, these people were accepted by acclamation:

President:	Prof. A.V. Nikolaev (USSR)
First Vice-President:	Prof. C. Froidevaux (France)
Second Vice-President:	Prof. B.L.N. Kennett (Australia)
Secretary-General/Treasurer:	Dr. E.R. Engdahl (USA)
Executive Committee:	Prof. A.E. Beck (Canada)
	Dr. H.K. Gupta (India)
	Prof. J. Lomnitz-Adler (Mexico)
	Prof. St. Mueller (Switzerland, Past-President)
	Prof. M. Ohnaka (Japan)

The President welcomed the new officers and wished them well.

#### *APPOINTMENT OF REPRESENTATIVES*

At the recommendation of the Executive Committee, the following representatives to other bodies were appointed:

ISC Executive Committee – Prof. N.V. Kondorskaya  
SCAR (Solid Earth Geophysics Working Group) – Dr. H.K. Gupta  
Commission for Recent Crustal Movement – Prof. A. Cisternas  
Commission for Geological Map of the World – Dr. V. Cermak, Dr. N. Pavlenkova  
Committee for Mathematical Geophysics – Prof. B.L.N. Kennett  
Federation of Digital Broad-Band Seismograph Networks – Dr. E.R. Engdahl  
Union Geochemistry Committee – Dr. H. Wakita

## RESOLUTIONS

There being no other business, the President moved to the presentation of resolutions.

Dr. P.W. Basham presented the resolutions on behalf of the Resolutions Committee. The resolutions adopted are printed below. In addition, the following resolutions were considered:

### *Artificially Stimulated Seismicity*

*Recognizing* the need to mitigate undesirable consequences of anthropogenic interventions into the environment,  
*IASPEI recommends that* a special project on “artificially stimulated seismicity”, of an interdisciplinary and multidisciplinary nature, be carried out

This resolution was withdrawn on the understanding that the topic be considered by the Executive Committee, and further at the Wellington Assembly. [At its 23 August, 1991, meeting the Executive Committee decided that the Commission on Earthquake Hazard and Prediction be asked to establish a Working Group on Artificially Stimulated Seismicity within the Sub-Commission on Hazard with Dr. H. Gupta as Chairman. The status of this group will be reconsidered at the next General Assembly.]

### *Earthquake Prediction Evaluation Committee*

*Recognizing* the increasing number of earthquake predictions by scientists and amateurs, and the social and economic problems generated by false predictions,  
*IASPEI considers it important to* create an International Earthquake Prediction Evaluation Committee (IEPEC) under the auspices of IUGG together with UNESCO and UNDRO, the conditions under which IEPEC would operate to be developed by the IASPEI Sub-Commission on Earthquake Prediction.

There was some concern as to the mechanism by which the proposed committee would operate, and the legal consequences of its action. It was agreed that this resolution be referred to the Executive Committee for further consideration. [At its 23 August, 1991, meeting the Executive Committee discussed this resolution and a fuller document prepared by Prof. M. Wyss setting out the proposed procedure under which this committee would work. The Executive generally approved the concept of such a committee, but thought it wise to seek the views of UNESCO and UNDRO before proceeding. It was suggested that a better way of operating would be for countries interested in using the services of the committee to make their approach through a UN agency such as UNESCO. There was also a strong opinion that the legal implications of the decisions of such a committee should be considered very carefully.]

### *Earthquake Prognostics*

*Noting* the important work being undertaken by the International Group on Earthquake Prognostics.  
*IASPEI recognizes* the activities on earthquake prognostics as an important multidisciplinary approach of transferring existing knowledge to the practices of earthquake loss reduction, thus providing a significant contribution to IDNDR.

The group mentioned in this proposed resolution was not part of the IUGG structure, and the meeting requested that it be referred to the Commission for IDNDR for their comment.

The President then made a presentation to the outgoing Secretary-General, Dr. R.D. Adams, and thanked him on behalf of the Association for his work during the last 12 years.

The meeting closed at 1945.



# IASPEI RESOLUTIONS ADOPTED AT PLENARY SESSION VIENNA, AUSTRIA, 21 AUGUST 1991

## 1. GLOBAL EARTHQUAKE CATALOGUES

*Recognizing* the importance of reliable and comprehensive global catalogues of earthquakes for assessing earthquake hazards, particularly in the context of IDNDR, *IASPEI recommends* that the International Seismological Centre extends its Historical Earthquake File to include earthquakes that took place before 1904, and identifies wherever possible a magnitude for each earthquake that would be appropriate for earthquake hazard studies.

## 2. SEISMO-GEOGRAPHICAL REGIONALIZATION

*Recognizing* that the Working Group on Regionalization of the Commission on Practice has finished the first part of its task on revisions to the existing Flinn-Engdahl Regionalization Scheme, *IASPEI recommends* that all seismological agencies implement and evaluate the recommended changes at their convenience.

## 3. DIGITAL SEISMIC WAVEFORM DATA

*Recognizing* the urgent need to both archive current digital seismic waveform data and make such data readily available to working scientists, *IASPEI commends* the activities of regional data centres and urges that adequate financial arrangements be set in place to ensure long-term operation of such centres.

## 4. TEST SITES FOR INTERNATIONAL COLLABORATION IN EARTHQUAKE PREDICTION

*Recognizing* the importance of earthquake source and prediction research to better understanding of the causes of devastating earthquakes and to work toward predicting them, *IASPEI encourages* national organizations supporting earthquake research to give high priority to funding of work in the IASPEI-approved sites for international collaborative earthquake prediction research, which are:  
(1) North Anatolian strike-slip fault (Turkey), (2) Aleutian-Alaskan subduction zone (USA), (3) deep mine-induced seismicity (South Africa), and (4) intermediate intraplate earthquakes (Vrancea, Romania) in the framework of the circum-Pannonian and Carpathian seismic belts.

## 5. GEOTHERMAL ATLAS OF ASIA

*Noting* the importance of geothermal data from all regions of the world, and, *Recognizing that* the Geothermal Atlas of Asia is one of the most significant international projects organized by the International Heat Flow Commission, *IASPEI encourages* the national geophysical committees in Asian countries to promote this work and support their National Working Groups involved to enable the successful completion of this project.

## 6. APPRECIATION

*Recognizing* the additional difficulties caused by the last-minute loss of the IASPEI venue for this assembly and the time and effort required to secure a second venue, *IASPEI thanks and congratulates* all those members of the Local Organizing Committee who accepted the challenge to help organize a meeting that will be memorable for its scientific achievements and hospitality of the Viennese people.

## 7. APPRECIATION

*Recognizing* the twelve years of outstanding service of Robin Adams in his position as Secretary-General, *IASPEI thanks* him for the dedication and skill with which he guided the scientific programs of the Association, wishes him well in his new endeavours, and encourages his continued participation in Association activities.

## **INTERNATIONAL DECADE OF NATURAL DISASTER REDUCTION**

As part of its commitment to the reduction of seismic risk, IASPEI took two important steps at the Vienna IUGG Assembly. First, a separate Commission on the IDNDR was established to replace the earlier Committee for the IDNDR. The Commission is charged with furthering the aims of the Decade through its support and organization of seismological research applications, education and publication. The members of the Commission are B.A. Bolt (Chairman), C. Kisslinger, G.A. Sobolev, Xie Lili, M. Ohtake, V. Karnik, C. Oliveira, and E. Kausel. Secondly, a programmatic report "Minimizing Earthquake Vulnerability", prepared by the Committee for the IDNDR, was adopted. It sets out the proposed goals and activities for IASPEI for the first portion of the Decade. It defines the general actions needed to accomplish the goals on earthquake hazards and specifies the resources required. The report makes key recommendations, addressed to the IASPEI family of scientists, engineers and social scientists interested in research on earthquakes, their description, and the mitigation of risk. These recommendations constitute a very broad and deep program which will be attractive to many seismologists and public officials. Recent damaging earthquakes have reinforced the view that major earthquakes near metropolitan areas have very serious economic effects, not only regionally, but nationally. Industries and institutions cannot expect to operate effectively for a considerable time after such an earthquake unless proper steps based on seismological knowledge are taken.

The IASPEI IDNDR report is available on request from the special Secretariat for IASPEI on the IDNDR, established in October at the headquarters of the State Seismological Bureau in Beijing, China. The address of this office, generously made available by the State Seismological Bureau, is: Yin Zhijun, IASPEI/IDNDR Secretariat, State Seismological Bureau, No. 63, Fuxing Avenue, Beijing 100036, CHINA (Fax: 86-1-821 0995). The Beijing office will accept suggestions and proposals from IASPEI members and seismological groups related to the IDNDR. It is intended to establish guidelines that will assist the specific investigators in writing specific proposals. The IDNDR office will also develop and maintain a database on related IDNDR programs, meetings, and funding sources. (B.A. Bolt, Chairman)

## **PUBLICATIONS**

Sato, H. (Editor), Special Issue, Scattering and Attenuation of Seismic Waves, Proceedings of the IASPEI Symposium held during the 25th General Assembly in Istanbul, Turkey, Physics of the Earth and Planetary Interiors, v. 67, 1991.

Scholz, C.H. (Editor), Special Issue, Modelling the Earthquake Source, Proceedings of the IASPEI Symposium held during the 25th General Assembly in Istanbul, Turkey, Tectonophysics, v. 195, 1991.

Wyss, M. (Editor), Special Issue, Earthquake Prediction, selected papers from the IASPEI Symposium held during the 25th General Assembly in Istanbul, Turkey, Tectonophysics, v. 193, 1991.

Wyss, M. (Editor), Evaluation of Proposed Earthquake Precursors, American Geophysical Union, Washington, D.C., U.S.A., 94 pp., 1991.

Dr. M. Hashizume has advised us that UNESCO still has a few copies of "Anatomy of Seismograms", Volume I of the IASPEI Software Library for personal computers, and the IASPEI 1991 Seismological Tables, which could be made available to suitable institutions in developing countries on written request. The request should be made to: Dr. M. Hashizume, Division of Earth Sciences, Science Sector, UNESCO, 7 place de Fontenay, 75700 Paris, FRANCE (Fax: 33-1-4306 1122).

## UNION AFFAIRS

Our parent body, the International Union of Geodesy and Geophysics, has elected the following Bureau members for the next four years:

President:	H. Moritz (Austria)
Vice-President:	P.J. Wyllie (USA)
Secretary-General:	G. Balmino (France)
Treasurer:	S. Gregersen (Denmark)
Bureau:	Y. Duzheng (China)
	G. McBean (Canada)
	A. Monin (USSR)

These officers, together with the Presidents of the seven Associations and the past President (Prof. V.I. Keilis-Borok), make up the Union's Executive Committee.

## FORTHCOMING MEETINGS

The following is a selection of forthcoming meetings in fields of interest to the Association:

- 1992 Mar 25-27 INTERNATIONAL SYMPOSIUM ON EFFECTS OF SURFACE GEOLOGY ON SEISMIC MOTION, Odawara, JAPAN
- 1992 May 17-23 5th INTERNATIONAL WORKSHOP ON SEISMIC ANISOTROPY, Banff, CANADA  
5IWSA, c/o the Conference Office, University of Calgary, Calgary, Alberta, CANADA T2N 1N4
- 1992 Jul 6-10 3rd SEDI SYMPOSIUM, Mizusawa, JAPAN  
Dr. M. Ooe, National Astronomical Observatory, Hoshigaoka-cho 2-11, Misusawa, Iwate 023, JAPAN
- 1992 Jul 19-25 10th WORLD CONFERENCE ON EARTHQUAKE ENGINEERING, Madrid, SPAIN  
10WCEE, c/o Tilsa, Londres 39-1ºB, 28028 Madrid, SPAIN
- 1992 Aug 17-21 WESTERN PACIFIC GEOPHYSICS MEETING, HONG KONG  
WPGM, American Geophysical Union, 2000 Florida Avenue, N.W., Washington, D.C. 20009, USA
- Aug 24 -Sept 3 29th INTERNATIONAL GEOLOGICAL CONGRESS, Kyoto, JAPAN  
29th IGC, P.O. Box 65, Tsukuba, Ibaraki 305 JAPAN
- 1992 Sep 6-12 5th INTERNATIONAL SYMPOSIUM ON SEISMIC REFLECTION PROBING OF THE CONTINENTS AND THEIR MARGINS, Banff, CANADA  
Dr. R.M. Clowes, Lithoprobe Secretariat, Geological Sciences Centre, 6339

Stores Road, The University of British Columbia, Vancouver, BC, CANADA  
V6T 2B4

- 1992 Sep 7-12 23rd GENERAL ASSEMBLY, EUROPEAN SEISMOLOGICAL COMMISSION,  
Prague, CZECHOSLOVAKIA  
1992 Oct 5-10 7th INTERNATIONAL SYMPOSIUM ON GEODESY AND  
PHYSICS OF THE EARTH, Potsdam, GERMANY
- 1992 Oct 7-10 2nd INTERNATIONAL CONFERENCE ON CONTINENTAL EARTHQUAKES,  
Beijing, CHINA  
Secretariat, II International Conference on Continental Earthquakes, State  
Seismological Bureau, No. 63, Fuxing Avenue, Beijing, 100036, CHINA
- 1994 Jan 10-21 27th GENERAL ASSEMBLY, IASPEI, Wellington, NEW ZEALAND
- 1995 Jul 21st GENERAL ASSEMBLY, IUGG, Boulder, Colorado, USA