

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

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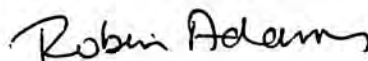
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## NEWSLETTER NO. 16      FEBRUARY 1986

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

Two natural disasters have dominated the news since my last Newsletter. The Mexican earthquake on 1985 September 19 showed again the terrible effect that local geological conditions can have in increasing earthquake damage, and the volcanic eruption in Colombia on November 13 re-emphasized the need to increase our preparedness for such natural disasters. We offer our sympathy to the victims and hope that our scientific efforts will someday lead to a lessening of such tragic effects from future natural occurrences. Our science is one with great social and economic responsibilities.



R D Adams  
Secretary-General

## VANCOUVER GENERAL ASSEMBLY 9-22 August 1987

IASPEI will hold its 24th General Assembly with the XIX General Assembly of IUGG, at the University of British Columbia, Vancouver, Canada, 9-22 August 1987.

The Second Circular should be issued in March 1986 with preliminary details of the programme and first call for papers. Those wishing to receive it and subsequent information should contact:

IUGG XIX General Assembly  
c/o Venue West, 801-750 Jervis Street  
Vancouver BC, Canada V6E 2A9

The Third Circular, with final programme details, second call for papers and registration forms is expected to be issued in October 1986.

Other relevant dates are:-

Abstract deadline:      1987 March 1

Fee increase for late registration:      1987 May 1

Please note that all requests for organizational information should be sent to the Canadian address above, and not to the IASPEI Secretariat.

### IASPEI Activities

IASPEI will participate in some of the 20 inter-Association symposia being arranged by IUGG, and will also be holding its own programme of symposia and workshops. In addition to scientific activities, all IASPEI Commissions will hold business sessions and there will be two plenary sessions of the Association at which business and scientific matters may be discussed, and elections will be held for Association officers.

### Scientific Programme

The following details are still for information only and are subject to confirmation in later Newsletters and the Third Circular from Vancouver.

#### 1. IUGG Symposia led by IASPEI, and Principal Convenors

Large-Scale Three Dimensional Earth Structure	(Prof T H Jordan)
Lower Crust Properties and Processes	(Prof St. Mueller)
Hydrogeological Regimes and Subsurface Thermal Effects	(Prof A E Beck)

#### 2. IUGG Symposia with IASPEI participation, lead organization, and IASPEI contact.

Quo Vadimus?	(Union)	(Prof V I Keilis-Borok)
Instability within the Earth and Core Dynamics	(Union)	(Prof F D Stacey)
Impact of Global Positioning System on Geophysics	(IAG)	(Dr Atsushi Tsuchiya)
Variations in Earth Rotation	(IAG)	(Prof M Rochester)
Slow Deformation and Transmission of Stress in the Earth	(IAG)	(Prof Xu Shao-xie)
Evolution of Mid-Oceanic Ridges	(IAVCEI)	(Dr R B Whitmarsh)
Comparative Planetology (Sputnik Commemoration)	(IAVCEI)	(Prof H Waenke)
Displaced Terranes and Continental Accretion	(IAGA)	(Prof D L Jones)
Results of the EMSLAB Project	(IAGA)	(Dr F A Nava)
Origin and Evolution of Sedimentary Basins and their Energy and Mineral Resources	(ICL)	(Prof D J Blundell)
Geochemistry and Geophysics of Transport in the Lithosphere-Asthenosphere System	(ICL)	(Prof C Froidevaux)

#### 3. IASPEI Symposia. Contacts given are likely to be principal convenors. Additional co-convenors will be appointed later.

Earthquake Hazard Assessment and Prediction	(Dr M J Berry)
Quantification of Earthquakes and the Determination of Source Parameters	(Dr D Denham)
Dynamic Thermal Regimes and the Deformation of the Lithosphere	(Prof W R Peltier)
Interpretation of Strong Motion Waveforms	(Dr D Weichert)
Computation and Interpretation of Seismic Waveforms in 2-D and 3-D Structures	(Prof J H Woodhouse)
Microseisms caused by Factors Internal and External to the Earth's Crust	(Dr E Hjortenberg)
Fine Structure and Anisotropy of the Lithosphere	(Dr G G R Buchbinder)
Earthquake Source Processes	(Dr S Das)
Physical Properties of Solid and Molten Earth Materials	(Prof T J Ahrens)
Seismological Instrumentation and Data Analysis in Developing Countries	(Dr H K Gupta)



ADDRESSES OF CONTACTS

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## COMMISSION ACTIVITIES

Various Commissions of IASPEI are planning activities in their own areas of interest. The European Seismological Commission, which meets regularly in the years between General Assemblies of IASPEI, is holding its Assembly at Kiel, FRG, jointly with the European Geophysical Society, 21-30 August 1986, with ESC activities taking place in the first week.

The International Heat Flow Commission is involved in the International Meeting on Geothermics and Geothermal Energy in Brazil, 10-14 August 1986. This is the first full-scale international meeting which the IHFC has arranged, and it is being supported by ISCU and Unesco, with local organization by the Instituto de Pesquisas Tecnologicas of São Paulo.

The Commission on Controlled Source Seismology is preparing publication of the papers given at its Workshop on Interpretation of Seismic Wave Propagation in Laterally Heterogeneous Structures, held in Japan immediately before the 1985 General Assembly. As well as being involved in the Second International Symposium on Deep Seismic Reflection Profiling of the Continental Lithosphere at Cambridge in July 1986, the Commission plans another "hard" workshop immediately before the 1987 Vancouver Assembly.

The Commission on Strong Motion Seismology also plans to hold a pre-Assembly workshop at Vancouver on "Calibration and Processing of Seismic Strong Motion Records".

The Commission on Wave Propagation in Real Media is actively involved in the Second International Workshop on Seismic Anisotropy, to be held in the Soviet Union in May.

The Commission on Seismological Theory, jointly with the sub-Commission on Algorithms of the Commission on Practice, is planning the publication of a Handbook of Seismological Algorithms with Prof D J Doornbos of Norway as Chief Editor, and contributions from leading workers in Europe, North America and Australia. As well as a printed publication, there will be a collection of all algorithms available on tape, and hopefully World Data Center A will help with the distribution. Unesco is helping to finance the Handbook's preparation.

## SEASEE NEWSLETTER

The Southeast Asia Association of Seismology and Earthquake Engineering has issued the first of what we hope will be a continuing series of Newsletters, giving information on its activities and plans. It contains a history of the Association since its founding in 1979 with member agencies from Indonesia, Malaysia, Philippines, Thailand and Hong Kong. Details are given of past meetings, and in particular of a Regional Seminar/Workshop on Preparedness for Geologic Disasters in Southeast Asia and the Pacific, held in Manila in December 1984. A similar meeting will take place in Indonesia in March 1986.

Officers elected for 1986 are:

President:	Dr C Sutrisno (Indonesia)
Vice-President:	Dr R L Kintanar (Philippines)
Secretary:	Mr R G Valenzuela (Philippines)
Treasurer:	Mrs L C Garcia (Philippines)

### ACTIVITIES WITH IAGA

The exact dates of the joint IASPEI/IAGA Assembly at Oslo in August 1989 have not yet been decided, as efforts are being made to minimize conflicts with other IUGG meetings. The final choice of dates should be known in a few months. In addition to planning for 1989, there are other joint activities with IAGA, especially at the 1987 Vancouver Assembly, where there will be a joint session on seismo-electromagnetic effects.

The joint IAGA/IASPEI Working Group on Electromagnetic Lithosphere and Asthenosphere Sounding (ELAS) will also meet in Vancouver. Its composition is:

IASPEI	IAGA
A L Hales (Australia)	A Adam (Hungary)
T Murase (Japan)	A G Duba (USA)
I S Sacks (USA)	V R S Hutton (UK)
G Sobolev (USSR)	U Schmucker (FRG)
Zeng Rong-sheng (China)	L L Vanyan (USSR)
	T Yukutake (Japan)

Dr Vanyan is likely to be Chairman, with Dr Sacks as Vice-Chairman.

An Ad Hoc Steering Committee for "International Study of the Earth's Core and Lower Mantle" (ISECALM) met at the IAGA Assembly in Prague in August 1985. The group noted that there had not recently been as much progress in understanding the dynamo in the Earth's core as might be expected, and proposed a systematic numerical attack on the problem with new supercomputers. Other topics of interest are core-mantle coupling and its effects on Earth rotation, heat flux into the lower mantle, short-term geomagnetic secular variation, and fluid motion at the top of the core. The group plans to meet in 1986 and report to IUGG via IAGA and IASPEI at the 1987 Vancouver Assembly, with the intention of requesting the setting up of a formal IUGG programme. The present Co-Chairmen of the Group are Prof D E Loper and Dr E R Benton, both of USA.

### RISK FROM NATURAL CATASTROPHIES IN THE CARIBBEAN

Prof José Grases of the Central University of Venezuela at Caracas is working on a project for regional studies of evaluation of seismic risk in the Caribbean area. Interest is being shown by institutions in Colombia, Panama, Costa Rica, Nicaragua, Guatemala, Cuba, Dominica and Guadeloupe. The project plans to further the investigation of past earthquakes in the area, and assess the seismic hazard as a cooperative effort on a regional scale.



## JOINT IASPEI/UNESCO ACTIVITIES

During the Tokyo Assembly last August, meetings were held of two joint IASPEI/Unesco Working Groups.

The Working Group on the Manual of Seismogram Interpretation intends to produce a comprehensive new manual covering the interpretation of both analogue and digital records, with numerous examples of sample seismograms from a wide range of different types of events. The Group, whose Chairman is Dr O Kulhanek of Sweden plans a further meeting at the European Seismological Commission Assembly at Kiel, FRG, in August 1986.

The Working Group on Unification of International Seismograph Networks (Chairman, Prof H-P Harjes of FRG) was attended by about 20 seismologists from 14 countries. It discussed the coordination of international networks of advanced stations, and also heard plans from developing national networks in various countries. One point to emerge was that more effort is needed to be put into trying to coordinate regional exchange of seismological information among neighbouring countries.

An informal meeting also took place of those seismologists from Africa who were present, who discussed problems of coordination and data exchange in Africa, and ways of overcoming them. Although there have recently been some improvements, as shown by a meeting in Zambia in April 1985 attended by representatives from Zambia, Zimbabwe, Mozambique, and other East African countries, Africa still remains among those parts of the world worst covered by seismological stations, and IASPEI and Unesco are jointly looking at ways of trying to improve this situation.

## SEISMIC TELEGRAPHIC TRANSMISSION CODE

A revision of the currently used transmission code for earthquake information has been carried out by a Working Group of the Commission on Practice and will be published by the World Meteorological Organization in its Manual of Codes. The new code meets the requirements of past IASPEI resolutions regarding amplitude and period measurements, as well as those of NEIC, ISC and the Group of Scientific Experts of the Committee of Disarmament. It is 'upward compatible' with the present code, which means that the new version does not make any features of the old code obsolete but simply increases the scope of data that can be transmitted. The old version may still be used as part of the new. The new code should not be used, however, until recipients advise that it is in use.

## IASPEI FINANCES

Income and expenditure for 1985 were very similar, and the Association finished the year with a cash balance of \$20,277. Expenses for the 1985 General Assembly were somewhat lower than expected, thanks to the efficiency of the Japanese organisers and an extra grant of \$3,000 from IUGG. Once again the major part of our expenditure (about 85%) was spent on active support of the Assembly and other scientific meetings. In 1986 we hope to keep expenditure low so more can be spent on supporting activities at the 1987 Vancouver Assembly. Detailed accounts for the period 1983-86 will be presented at Vancouver.



## OBITUARY - PROF C F RICHTER

We were saddened by the death on 30 September 1985 of Prof Charles Richter at the age of 85. With people all over the world, his name is probably the best known in connection with earthquakes, but his contributions to seismology extend far beyond the development of the magnitude scale. His book "Elementary Seismology" still remains a valuable source of information on all aspects of seismology, and it was typical of him that at the time of his death he was reported to be studying preliminary reports of the Mexican earthquake earlier that month. As a true seismologist, his overriding interest was the study of earthquakes themselves.

## FUZZY MATHEMATICS IN EARTHQUAKE RESEARCHES

A very successful symposium on this topic was held in September 1985 in Beijing. About 90 scientists and engineers took part with overseas participants from GDR, Japan, New Zealand and USA. Some 65 papers were presented on the application of this technique to earthquake engineering, prediction, assessment of hazard and other topics. The proceedings have already been published, with Feng Deyi and Liu Xihui as editors. The address of the Organizing Committee is: Seismological Bureau of Tianjin, 17 Friendship Avenue, Tianjin, China.

## SEISMIC AND GEOGRAPHIC REGIONALIZATION

Following a request from the Commission on Practice, J B Young and Catherine Pooley (UK) have published a report on "Classification of Seismic and Geographic Regionalization" which updates the definition of the Flinn-Engdahl regions used by seismological agencies. It provides a revised table of seismic and geographic region names, and in microfiche form a complete table of geographic region names for all four quadrants of the Earth at each degree of latitude. A set of 13 computer-drawn maps plots regions and their numbers with coastlines. Other maps delineate seismic and non-seismic areas, and continental and oceanic areas.

## INTERNATIONAL DECADE OF HAZARD REDUCTION

In an address to the 8th World Conference on Earthquake Engineering in San Francisco in 1984, Dr Frank Press, President of the US National Academy of Sciences made a strong proposal for an International Decade of Hazard Reduction for the 1990s. This idea is being strongly supported by the International Association for Earthquake Engineering, and is gaining support among earthquake engineers in USA, USSR, UK, Japan and New Zealand.

Dr Press' proposal would cover not only earthquake and volcanic eruptions, but also floods, hurricanes and events such as comet impact. If such a programme does eventuate, geophysicists and especially seismologists will be closely involved.

## FORTHCOMING MEETINGS

The following is a selection of forthcoming meetings in the field of interest of the Association.

- 1986 Apr 7-12 THE CONTINENTAL LITHOSPHERE - STRUCTURE, COMPOSITION AND PROCESSES  
Karlsruhe, F R G  
ICL, German Geophysical Society  
H Wilhelm, Geophysikalisches Institut, Hertzstrasse 16,  
D-7500 Karlsruhe 21, FRG
- 1986 May 20-27 SECOND INTERNATIONAL WORKSHOP ON SEISMIC ANISOTROPY  
Puschyno, USSR  
Soviet Geophysical Committee, Molodezhnaya 3, Moscow, USSR
- 1986 Jul 15-17 DEEP SEISMIC REFLECTION PROFILING OF THE CONTINENTAL LITHOSPHERE  
Cambridge, UK  
BIRPS, Bullard Lab., Madingley Road, Cambridge, CB3 0E2, UK
- 1986 Jul 21-  
Aug 1 SUMMER SCHOOL ON SEISMIC HAZARD IN MEDITERRANEAN REGIONS  
Strasbourg, France  
CSEM, 5 rue R Descartes, 67084, Strasbourg, FRANCE
- 1986 Aug 10-14 INTERNATIONAL MEETING ON GEOTHERMICS AND GEOTHERMAL ENERGY  
Guarujua, Sao Paulo, Brazil  
International Heat Flow Commission, IPT  
Dr V M Hamza, IPT, CP 7141, 01000 Sao Paulo, BRAZIL
- 1986 Aug 21-30 EUROPEAN SEISMOLOGICAL COMMISSION/EUROPEAN GEOPHYSICAL SOCIETY  
Kiel, FRG  
Prof R Meissner, Institut für Geophysik, Olshausenstr 40,  
D-2300 Kiel 1, FRG
- 1986 Sep 8-13 ANISOTROPY AND INHOMOGENEITY OF THE LITHOSPHERE AND ASTHENOSPHERE  
Bechyne, Czechoslovakia  
Dr V Babuska, Geophysical Institute, Bocni II,  
14131 Prague 4, CZECHOSLOVAKIA
- 1986 Oct 30-  
Nov 5 INTERNATIONAL SYMPOSIUM ON NONLINEAR SEISMOLOGY  
Suzdal, USSR  
Soviet Geophysical Committee, Molodezhnaya 3, Moscow, USSR
- 1986 Dec 29-31 EIGHTH SYMPOSIUM ON EARTHQUAKE ENGINEERING  
Roorkee, India  
Indian Society of Earthquake Technology  
Prof B V K Lavania, Dept of Earthquake Engineering  
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- 1987 Aug 9-22 XIX GENERAL ASSEMBLY, IUGG  
Vancouver, B C Canada  
IUGG Assembly, c/o Venue West, 801-750 Jervis Street, Vancouver BC  
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- 1989 Aug IASPEI/IAGA JOINT ASSEMBLY  
Oslo, Norway