

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

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## NEWSLETTER NO.21 - MARCH 1988

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

The IASPEI Bureau met recently in Newbury, and among the most important items of business was the initial planning for our next General Assembly in Istanbul, at the end of August 1989. Two representatives of the Local Organising Committee attended, and it seems that on both the scientific and cultural sides the Assembly should be extremely rewarding. The only warning from our hosts is that August in Istanbul can be very hot. Please note the details in this Newsletter, and pass them on to your colleagues, so that we can all start to plan our participation.



R. D. Adams  
Secretary-General

## INTERNATIONAL DECADE FOR NATURAL DISASTER REDUCTION

This programme, initially suggested as the International Decade for Natural Hazard Reduction, was adopted by the United Nations General Assembly late in 1987 and the Secretary-General of UN has to report within one year on the terms of reference and suggested mechanism for the Decade, which will be held during the 1990's. Naturally, IASPEI wishes to be involved fully in both the planning and implementation of the Decade. Various sub-meetings are being held by international and national bodies almost immediately, and we hope to be involved in these.

The US National Academy of Sciences has given its ideas on the Decade in a publication "Confronting Natural Disasters". Among suggested projects of potential interest to IASPEI are: the establishment of co-operative programmes for strong motion measurement and analysis, the development of new earthquake prediction models and warning systems, the preparation of unified risk maps, the study of microzonation, studies of seismic gaps, and the organisation of a co-ordinated international earthquake information service.

25 th GENERAL ASSEMBLY OF IASPEI, ISTANBUL, TURKEY  
21 AUGUST - 1 SEPTEMBER 1989

This Assembly will be held in the Ataturk Cultural Centre in the Taksim area of central Istanbul, with accommodation at a wide range of prices nearby.

One exciting event being planned is a visit during the middle week-end of the Assembly to the North Anatolian Fault Zone, with an overnight stop near Abant.

The scientific programme has now been decided and will include the following topics:

Symposia

Scientific Horizons in IASPEI

Detailed Structure and Processes of Active Margins

The Earth's Deep Interior and Dynamics of Subducting Slabs

Geodynamical Processes: Quantitative Models and New Geophysical Constraints

Physical and Petrological Nature of Discontinuities in the Lithosphere

Seismotectonics of the Alpine Himalayan Belt and Other Major Orogenies

Modelling the Earthquake Source

Determination of Source Parameters Using Digital Seismograms

Earthquake Prediction and Premonitory Phenomena

Earthquake Hazard Assessment in the Interplate Setting

Estimation of Site Specific Ground Motion for Large Earthquakes

Computation and Interpretation of Seismic Wavefields in 2-D and 3-D

Structures

Scattering and Attenuation of Seismic Waves

Forward and Inverse Techniques in Geothermal Modelling

Correlation of Geothermal and Other Parameters

Workshops

Travel-Time Tables and Earthquake Location Problems

Regional Data Centres: State of the Art

Instrumentation and Data Analysis in Developing Countries

Comprehensive Mapping of the Lithosphere

Details of convenors and timetabling are now being worked out and will be announced in the next Newsletter.

For the first session "Scientific Horizons in IASPEI" we plan to give each of our Commissions an opportunity to explain the work and plans of their group.

We expect that abstracts will have to be submitted to convenors by mid-March 1989.

The First Circular, with basic information, will be issued shortly, and the Second Circular, with details of convenors, timetabling and accommodation will be available later this year.

Those wishing to ensure they receive these Circulars should write to:

Dr. Otkay Ergunay  
Head, Earthquake Research Division  
Ministry of Public Works and Settlement  
Yüksel Cad No. 7/F  
Ankara, Turkey

## RELATIONS WITH IUGG

Many of you will know that the new Bureau of IUGG, elected at Vancouver, called for comments from individuals and groups within the Union on the structure and workings of the Union, and its Associations. The preparation of IASPEI's submission was a major item at the recent Bureau meeting, and a reply has now been sent. We first felt it desirable to reiterate the relation between the Union and its seven constituent Associations, as we see it. We believe that the Union's role is mainly one of co-ordination among the various Associations, with detailed activity in particular branches of geophysics being left to the Association concerned.

There is much concern in the IUGG about the Union's General Assemblies. There is always criticism that the meetings are too long, that there are bad clashes in time-tabling, and that particular interests are not being given enough time. A perfect solution to these problems appears unobtainable, but we sensed a feeling that recent General Assemblies, and in particular that at Vancouver, were much improved. In particular we recommend that oral presentations be kept to a minimum, and preferably be of the invited review type, and that poster presentations be further encouraged. We also suggested that the number of Union interdisciplinary symposia be further reduced, say to 15, rather than the present 20.

We pointed out to the IUGG Bureau some of the recent achievements and improvements in IASPEI, and detailed ways in which our structure and activities change to take account of new ideas in seismology and physics of the Earth's interior.

The final document submitted to IUGG is quite lengthy, and has already been circulated to the IASPEI Executive Committee and Chairmen of Commissions. If others wish to be sent a copy, please ask the Secretary-General.

Suggestions are also being requested along similar lines by Professor Helmut Moritz of the IUGG Bureau, on behalf of an IUGG Advisory Board on Scientific Policy, consisting of Professors George Backus, Raymond Hide and himself. Any additional suggestions to be included in IASPEI's response should be sent immediately to the Secretary-General.

## OBITUARY - PROFESSOR OTTO NUTTLI

Professor Otto W Nuttli, of St. Louis University, passed away on 9 February 1988, after a long struggle with cancer. He was widely known for his excellence in teaching and research, and remembered by his students for his understanding of fundamental problems in geophysics and his willingness to share that knowledge.

Professor Nuttli's research contributions are unique in their originality and substance. He used eastern North America as a base for studies of mantle structure, earthquake occurrence and magnitudes, and attenuation. He applied these studies to problems of earthquake engineering, source parameters, and nuclear explosion seismology.

A high point in his career was the award last October of the Medal of the Seismological Society of America, which honours 'outstanding contributions to seismology and earthquake engineering'. We shall all miss Professor Nuttli as a mentor and colleague, but especially for the good and exceptional person he was. May he rest in peace. (E R Engdahl)

## PUBLICATIONS

The proceedings of the Symposium on Historical Seismograms and Earthquakes, held at our General Assembly in Tokyo in August 1985, have been published by Academic Press as a book "Historical Seismograms and Earthquakes of the World" edited by W H K Lee, H Meyers and K Shimazaki. This publication includes some additional papers and presents a valuable record of the availability of old seismograms, and of the use they are being put to in order to extract information of value to present-day studies.

The proceedings of the Symposium on Nonlinear Seismology held at Suzdal, USSR, in October-November 1986 have been published as a special issue of Physics of the Earth and Planetary Interiors (Vol 50, No.1. January 1988). The guest editors are A V Nikolaev, D F Parker and J Engelbrecht.

There is also now available an English edition of "Earthquake Research in China", published by Atherton Press for the State Seismological Bureau of China. In a preface to the first issue, the Editor-in-Chief, Dr. Chen Yong, expresses the hope that this journal will serve as an academic window to give access to work that has previously been published only in Chinese.

## AFRICAN AFFAIRS

Following our resolution No.2 at the Vancouver General Assembly last year, IASPEI is now approaching Unesco and ICL about the possibility of holding a joint Regional African Seismological Workshop, probably in September 1990. We hope that the meeting might be held at the United Nations Offices in Nairobi, Kenya. The meeting would cover topics relevant to tectonic, structural and seismological studies in Africa and we would hope to attract as participants, scientists from Africa and also those elsewhere with scientific interests relevant to Africa.

The joint IASPEI/Unesco/ICL Working Group on Seismological Recording and Earth Science Studies in the African Continent is also heavily involved in the organisation of a Training Course for African Seismological Observers, being held by the Zambian Geological Survey Department in Lusaka in September 1988. The course is also being supported by the Finnish agency FINNIDA.

Authorities in Kenya and Uganda have recently approached the Working Group for advice on the re-establishing of seismological recording in these countries.

## IASPEI/IAGA JOINT COMMITTEE ON 'SEISMO-ELECTROMAGNETIC EFFECTS

Following a successful workshop on this topic at the Vancouver Assembly, an ad hoc Committee has been set up, consisting of Dr. M. Gokhberg (USSR), Chairman, Dr. M. Parrot (France, IAGA) and Dr. M.J.S. Johnston (USA, IASPEI).

Its terms of reference are:

- to promote and co-ordinate activities in this field in the two Associations
- to inform relevant groups in each Association about such activities
- to organise sessions on this topic at Assemblies and meetings
- to define a long-term programme to be submitted to both Associations at their 1989 Assemblies.



## STUDY OF THE EARTH'S DEEP INTERIOR

A newsletter 'Deep Earth Dialog' is being produced by the new IUGG Committee that was set up at the Vancouver Assembly. The first issue traces the history of events that led to the formation of the group, including activities at IAGA and IASPEI Assemblies. The first SEDI symposium will be held during the meeting of the Committee on Mathematical Geophysics at Blanes in Spain, 23-25 June 1988. The five principal topics will be:

- Physical properties and phase changes at the inner-core and core-mantle boundaries
- Core structure and oscillations
- Dynamics of the core
- Lower mantle structure and convection
- Core-mantle boundary topography and interactions

Those interested should contact SEDI's Secretary, Prof. David Loper, Geophysical Fluid Dynamics Institute, Florida State University, Tallahassee, Florida, 32306, USA.

### ISOP

An International Seismological Observing Period is being proposed as part of SEDI. Its purpose is to produce a new and much improved data set for mapping three-dimensional structure of the Earth, using the existing global seismological network. During ISOP, details of later phases, such as S, ScS, PKP<sub>2</sub>, and PnKP would be requested from a selection of large events, and submitted for inclusion in ISC analysis.

These later phases would add greatly to the detail already provided by tomographic mapping of high-frequency first arrivals. It is suggested that once strategies and techniques are set up, ISOP could run for a three year period, during which efforts would be made to improve the quality of the arrival-time data, with special emphasis on accurate timing and correct polarization.

ISOP is being actively promoted by Prof. T H Jordan of M.I.T. (USA) and the IASPEI Commission on Practice has established a special working group under Dr J Hjelme (Denmark).

## FINANCE AND FUNDING

The Association finished 1987 with a cash balance of \$24,142.31, which is considered adequate when there is no Assembly in the following year. This balance is about \$6,000 lower than at the beginning of the year, and reflects our expenditure on travel grants for the Vancouver General Assembly. Of a total expenditure of \$90,600, more than \$82,000 was spent on the Assembly and associated meetings.

Our ability to fund these activities was helped greatly by contracts from Unesco (\$22,400) and grants through ICSU from the US National Academy of Sciences (\$30,000). Other sources of income were grants from ICSU (\$4,000), IUGG (\$3,000), Unesco (\$2,000) and Kinematics Systems (\$400). We received \$1,332 in interest, and an accounting "exchange adjustment" of \$1,388 which appears as income, arose from the changing value of sterling relative to the dollar during the year.

For 1988 we are to receive a further grant of \$45,000 from the National Academy of Sciences. This is being used to support various activities such as the Training Course for African Seismological Observers, the European Seismological Commission Assembly and associated meetings, working group meetings at the Ninth World Conference on Earthquake Engineering, and various smaller meetings of commissions and working groups. These funds are a most valuable aid to carrying out our various activities. For 1989 we expect to concentrate our funding on activities related to the General Assembly at Istanbul.

# FORTHCOMING MEETINGS

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

- 1988 May 9-13 CAUSES AND EFFECTS OF EARTHQUAKES AT PASSIVE MARGINS AND IN AREAS WITH POSTGLACIAL REBOUND ON BOTH SIDES OF THE NORTH ATLANTIC  
Copenhagen, Denmark  
Dr. S. Gregersen, Geodetic Institute, Gamlehave Alle 22  
Charlottenlund, DENMARK
- 1988 May 31 - SEISMIC ANISOTROPY IN THE EARTH'S CRUST  
Jun 4 Berkeley, California, USA  
Dr. P.C. Leary, Dept. of Geological Sciences, University of Southern California, Los Angeles, CA. 90089-0741 USA
- 1988 Jun 20-25 CONFERENCE ON MATHEMATICAL GEOPHYSICS  
Blanes, Spain  
A.M. Correig, Facultat de Fisica, Universitat de Barcelona, E-08028, SPAIN
- 1988 Jul 1-8 SEISMIC PROBING OF THE CONTINENTS AND THEIR MARGINS  
Canberra, Australia  
Seismic Workshop, 1988  
AGTS, GPO Box 2200, Canberra ACT 2601, AUSTRALIA
- 1988 Aug 14-21 INTERNATIONAL CONFERENCE ON NATURAL AND MAN-MADE HAZARDS IN COASTAL ZONES  
Ensenada, Mexico  
Tsunami Society/Hazards Conference, Suite 6, 2919 Kapiolani Blvd, Honolulu, Hawaii 96826, USA
- 1988 Aug 23-27 GENERAL ASSEMBLY, EUROPEAN SEISMOLOGICAL COMMISSION  
Sofia, Bulgaria  
Geophysical Institute, Acad. Bonchev Str., Sofia 1113-BULGARIA
- 1988 Oct 3-8 WORKSHOP ON VOLCANIC SEISMOLOGY  
Capri, Italy  
Prof. Paolo Gasparino, Dipartimento di Geofisica and Vulcanologia, Universita di Napoli, 80138 Naples, ITALY
- 1988 Nov-14 EXPLORATION AND DEVELOPMENT OF GEOTHERMAL RESOURCES  
Kumamotu and Beppu, Japan  
Geothermal Research Society, c/o Geological Survey of Japan, 1-1-3 Higashi, Yatabe, Tsukuba, Ibaraki 305, JAPAN
- 1988 Nov 14-18 SEMINAR ON THE PREDICTION OF EARTHQUAKES  
Lisbon, Portugal  
Economic Commission for Europe  
Laboratorio Nacional de Engenharia Civil, Av. do Brasil, 101, 1799 Lisbon Codex, PORTUGAL
- 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 Aug 21 - 25th GENERAL ASSEMBLY, IASPEI  
Sep 1 Istanbul, Turkey  
Dr. Otkay Ergunay, Earthquake Research Division, Ministry of Public Works and Settlement, Yuksel Cad No.7/F, 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, CZECHOSLOVAKIA
- 1991 Aug 11-24 XX GENERAL ASSEMBLY, IUGG  
Vienna, AUSTRIA