

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



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# NEWSLETTER No. 39 December 1997

#### Dear Colleagues:

This IASPEI Newsletter is the second issue to be distributed using the IASPEI bulk E-mail system to those who have Internet addresses. This system also will be used to broadcast announcements about forthcoming meetings and other information of interest to IASPEI members. Hard copy versions of the Newsletter will continue to be distributed to those without Internet addresses with the assistance of the National Geophysical Research Institute in Hyderabad, India.

I also take this opportunity to announce the further development of the IASPEI Home Page on the WorldWideWeb. The current URL is

http://www.seismo.com/iaspei/index.html

Presently on the Home Page you can find a full Meeting Report on the IASPEI General Assembly held in Thessaloniki, Greece, 18-28 August 1997, as well as information and registration materials for IASPEI sponsored meetings to be held at Santiago, Chile, 27-30 April 1998, and at Hyderabad, India, 1-3 December 1998.

Your comments about how well the IASPEI bulk E-mail system and the Home Page may best serve you are welcome.

Sincerely,

E. R. Engdahl, IASPEI Secretary-General

ESC Training Course for Young Seismologists

# Reykjavik, Iceland 7-8 September 1996

The ESC with the financial support of IASPEI, sponsored a training course for young seismologists in order to expose them to data acquisition and processing techniques used by many established seismologists throughout Europe and the world.

The training course, the first of its kind, took place in the two days before the General Assembly in Reykjavik and included the following subjects: analog and digital transfer functions; system calibration and calibration data; the influence of seismic recording systems on wavelet parameters; fir anti-alias filters (problems and cures); simulation and restitution filters; stacking techniques in seismology; processing broad-band recordings for crust and mantle anisotropy; data processing for automatic operation of seismic networks; and the SILnetwork (the need for automatic processing in high seismicity areas). The lecturers in their specialist subjects were Axel Plessinger, Lev Vinnik, Frank Scherbaum, Reynir Bodvarsson and Steinunn Jakobsdottir.

Eighteen students attended the course from eleven countries in Europe. Questionnaires were distributed amongst the students inviting them to comment on the overall impression of the course together with each individual lecture. The responses indicated a high rating for the course overall, although the individual lecture questionnaires produced a mixed reaction with regard to the level of difficulty and detail and these constructive comments will be taken into account for future events. Distribution of lecture notes and transparencies was recommended in

order to reduce the time spent taking down the information and allow more time for listening and interaction.

It was clear that the students had a varied level of experience and background knowledge, a situation which is always difficult to cater for. The lecturers are therefore commended for the acknowledged overall success of the course which resulted from their care and attention to content. It is recommended that, in future, lecturers receive prior information participant's experience. Distributed lecture notes will serve to consolidate the training received through their availability as a reference set when students have returned to their institutes.

Following receipt of a positive report on the training course, the ESC Bureau thanked the lecturers and organizers on behalf of ESC members and endorsed a proposal to hold a second training course before the next General Assembly in Tel-Aviv (23-28 August 1998). A resolution to this effect was endorsed by the ESC Council at the closing plenary.

Alice Walker, ESC Assistant Secretary-General

# 29th General Assembly Thessaloniki, Greece 18-28 August 1997

The 29th General Assembly was held at the University of Macedonia and the nearby Congress Center of HELEXPO, Thessaloniki, Greece, from 18-28 August 1997.

The Assembly was attended by 1050 scientific participants and 70 accompanying members from 62 countries, making this the largest IASPEI General Assembly ever held. There were 716 oral papers and 695 posters scheduled in 23 symposia and 23 workshops.

# Opening Ceremony 18 August 1997

The Opening Ceremony took place at 1900 on 18 August 1997, with speakers being introduced by Assoc. Prof. Anastasia Kiratzi on behalf of the Local Organizing Committee.

Prof. Basil Papazachos, Chairman of the Local Organizing Committee, welcomed the

participants to the city of Thessaloniki and gave a short description of the profile of the Geophysical Laboratory of the University of Thessaloniki that hosted the meeting.

Expressing the warmest thanks of IASPEI to the local, regional and national authorities for their strong support, Prof. Claude Froidevaux the President of IASPEI gave some insight about the scientific program of the meeting. For this the landscape of the Aegean region was described for 2 distinct periods of the geological past. Going back 20 to 50 million years ago, a continuous mountain chain joins the Hellenids and the Taurids from Europe to Asia - their is no Aegean sea! The onset of subduction beneath the southern margin allows this high topography to collapse. The process is still ongoing and seismology and space geodesy are used nowadays to quantify this extension of the crust and to image the subducting African lithosphere. Closer to historic time, some 20 thousand years ago, the Aegean basin did exist, but it had lost its top 125 meter layer of sea water - this was the time of the climax of the last glaciation and a great quantity of the Earth's sea water was trapped as ice in the polar regions. The gradual melting of these ice caps replenished the Mediterranean Sea with water, so that the shorelines which had moved seaward by several tens of kilometers in the Aegean retreated landward, leaving isolated islands where neolithic men had explored large emerged land masses. Some 3500 years ago historic men were terrified by a more sudden catastrophe - the eruption of Thira, today's Santorini. All these natural phenomena with these various time scales, earthquakes included of course, form the background of our scientific program explained IASPEI's President, while thanking the local organizing team for its great efficiency in setting up the meeting.

The Rector of the University of Macedonia, Prof. I. Tsekouras, and the Rector of the University of Thessaloniki, Prof. A. Mantis, gave warm greetings to the participants and wished them every success in their scientific meetings.

The president of the Organization of Earthquake Planning and Protection of Greece, Prof. D. Papanikolaou, gave a brief report on the profile of this organization and the tasks that it has undertaken towards earthquake loss prevention in Greece.

On behalf of the local authorities of the city of Thessaloniki, the Prefect of the city Mr. K. Papadopoulos, the Mayor Mr. K. Kosmopoulos, and the General Secretary of the region of Macedonia - Thrace Mr. Ch. Sofianos, gave short greetings to the participants, wishing them a pleasant stay in Thessaloniki. They all noted the importance of scientific research related to the seismotectonics of an area such as Greece where the seismic hazard is high and there is social demand for some progress, especially in the field of short-term earthquake prediction.

The General Assembly was opened by the Secretary General of the Ministry of Internal Affairs, Mr. D. Lavrentakis. He noted the wide interest in Greece in earth sciences and especially in seismology. He wished to all delegates an interesting and enjoyable meeting.

# Opening Plenary Session 19 August 1997

Present: Prof. C. Froidevaux (President) in the Chair and about 300 delegates and guests.

The President opened the meeting at 0830 and welcomed participants.

The President introduced the Secretary-General.

Dr. E.R. Engdahl (Secretary-General) read aloud the following list of colleagues who had died since the last IASPEI General Assembly in 1995 and asked those present to take a few moments of silence in their memory.

Dr. Ramon R. Cabre (Bolivia)

Prof. Charles L. Drake (USA)

Dr. Vit Karnik (Czech Republic)

Prof. Mark Landisman (USA)

Prof. Drummond H. Matthews (UK)

Prof. Robert P. Meyer (USA)

Prof. Stephan Mueller (Switzerland)

Prof. John E. Nafe (Canada)

Mr. George W. Patraw (USA)

Dr. Jose Pinto Peixoto (Portugal)

Dr. Lautaro Ponce (Chile)

Prof. Albert G. Prozorov (Russia)

Dr. Cornelius Radu (Romania)

Prof. Nikolai V. Shebalin (Russia)

Dr. Eugene M. Shoemaker (USA)

Prof. Laurence L. Sloss (USA)

Prof. Dr. Albert Stein (Germany)

Prof. Ziro Suzuki (Japan)

Dr. Ludvik Waniek (Czech Republic)

The Secretary-General announced that most of the lectures, all poster sessions, and the Technical Exhibition will be held in the halls and amphitheaters of Macedonia University (indicated by the prefix MAC in the program), whereas there as some sessions scheduled at the nearby Building No 8, Congress Center of HELEXPO (indicated by prefix HAL).

The Secretary-General announced that the major items of business at this Assembly were:

To develop the IASPEI scientific program for the 22nd General Assembly of IUGG and the 30th General Assembly of IASPEI, to be held in Birmingham, England, 19-30 July 1999.

To select a venue for the 31st General Assembly of IASPEI in 2001, which will be held jointly with IAGA. The candidate host location is Hanoi (Vietnam).

Prof. B.L.N. Kennett (First Vice-President) announced the composition of the Resolutions Committee and the guidelines for submission of resolutions:

Prof. B.L.N. Kennett (Australia), Chairman

Prof. Xie Li-Li (China)

Prof. A. Kiratzi (Greece)

The deadline for submission of draft resolutions was set at 1800, Tuesday, August 26.

The President closed the meeting and introduced Dr. C. Papazachos, who delivered the Association Lecture "Deep Structure and Active Tectonics in the Aegean and Surrounding Area".

# **Scientific Program**

Session summaries can be found on the IASPEI Home Page at the URL address

http://www.seismo.com/iaspei/index.html

Association Lectures

19 Aug, Deep Structure and Active Tectonics in the Aegean and Surrounding Area (L1), Lecturer: C. Papazachos (Greece) 26 Aug, The Global Seismic Hazard Assessment: Program: 1992-1997 (L2), Lecturer: D. Giardini (Italy)

#### Symposia

- 19-20 Aug, Earthquake Scenario, Seismic Risk and Loss Assessment (S1), Conveners: Chen, Yong (China), A. Kappos (UK), A. Shapira (Israel), K. Pitilakis (Greece)
- 19-20 Aug, Are the Oceanic Plates Rigid? (S2), Conveners: D. Sandwell (USA), L. Fleitout (France), K. Katsambalos (Greece)
- 19-20 Aug, Geodynamics of the Alpine-Mediterranean Collision Zone (S3, Co-Sponsored by ICL/ILP), Conveners: W. Spakman (The Netherlands), B.A.C. Ambrosius (The Netherlands), E. Kissling (Switzerland), D. Mountrakis (Greece), G. Veis (Greece)
- 20 Aug, Strong Ground Motion in Different Tectonic Regions (S4), Conveners: Xie, Li-li (China), N. Ambraseys (UK), N. Theodulidis (Greece)
- 20-21 Aug, Continental Crustal and Lithospheric Models From Seismic and Non-Seismic Data: Frontier Regions and Revisions to Accepted Models (S5), Conveners: W. D. Mooney (USA), G. Musacchio (Italy), Wang, Chunyong (China)
- 19-20 Aug, Stochastic Seismology: Waves in Complex Media (S6), Conveners: Wu, Ru-Shan (USA/China), K. Holliger (Switzerland), H. Sato (Japan)
- 21 Aug, Time and Non-Time Dependent Seismicity Models and Their Application in Seismic Hazard Assessment (S7), Conveners: B. Papazachos (Greece), J. Bonnin (France), F. Mulargia (Italy), G. Purcaru (Germany), J. Rundle (USA), I. Papoulia (Greece)
- 21 Aug, Mantle Rheology and Geodynamics: Inverse Problems and Geophysical Phenomenology (S8, Co-Sponsored by CMG and SEDI), Conveners: W.R. Peltier (Canada) and K. Lambeck (Australia), B. Hager (USA), R. Sabadini (Italy), S. Singh (UK)
- 20-21 Aug, Heat Flow, Seismic Structure and Seismicity in Active Tectonic Regimes (S9, Co-Sponsored by IHFC), Conveners: L. Rybach

- (Switzerland), S.B. Smithson (USA), M. Fytikas (Greece)
- 21-22 Aug, Earthquakes, Paleoseismology and Active Tectonics (S10, Co-Sponsored by ICL/ILP), Conveners: Zhang, Peizhen (China), S. Pavlides (Greece)
- 21-22 Aug, Structure in the Lithosphere, Geodynamic Processes and Anisotropy (S11, Co-Sponsored by ICL/ILP), Conveners: J-P. Montagner (France), L. Vinnik (Russia), M. Warner (UK), G. Drakatos (Greece), P. Papadimitriou (Greece)
- 22 Aug, Achievements and Future Perspectives After 30 Years of Global Travel Time Data on the Bulletins of the International Seismological Centre (S12), Conveners: A. Morelli (Italy), A. Hughes (UK), B. Karacostas (Greece)
- 25-26 Aug, Earthquake Prediction (S13), Conveners: K. Hamada (Japan), Chen, Yong (China), E. Papadimitriou (Greece)
- 25 Aug, Structure and Evolution of the Earth: Geophysical Observations, Laboratory Constraints, and Modeling (S14, Joint with SEDI), Conveners: T. Shankland (USA), A. Chopelas (Germany), S. Honda (Japan), H. Paulssen (The Netherlands), J.-P. Poirier (France), D. Kondopoulou (Greece).
- 25 Aug, Volcano Seismology (S15), Conveners: H. Benz (USA), B. Chouet (USA), Y. Ida (Japan), M. Martini (Italy), Ph. Voidomatis (Greece)
- 26-27 Aug, Earthquake Nucleation, Dynamic Rupture, and its Arrest: Observations and Physical Modeling (S16), Conveners: M. Ohnaka (Japan), G.C. Beroza (USA), M. Campillo (France), S. Das (UK), W.L. Ellsworth (USA), G. Stavrakakis (Greece)
- 25-27 Aug, Subduction Zones: Structure, Dynamics and Magmatism (S17), Conveners: D. Zhao (USA), A. Hasegawa (Japan), M. Reyners (New Zealand), Zang, Shao-Xian (China), S. Dimitriadis (Greece)
- 26 Aug, Seismic Waves in the Elastically Nonlinear Energy-Saturated Earth (S18), Conveners: I. Beresnev (Canada/Russia), A.V. Nikolaev (Russia), K-L. Wen (Taiwan), P. Dimitriu (Greece)

- 27-28 Aug, Slab Structure and Dynamics of Deep Subduction (S19), Conveners: R. van der Hilst (USA), M. Gurnis (USA), C. Lithgow-Bertelloni (USA), D. Rubie (Germany), M. Weber (Germany), N. Delibassis (Greece)
- 26-27 Aug, Seismological Data and Practice Beyond Year 2000, (S20), Conveners: E.S. Husebye (Norway), E. Bergman (USA), F. Dowla (USA), E. Hjortenberg (Denmark), M. Joswig (Germany), H. Kawakatsu (Japan), A. Tselentis (Greece)
- 28 Aug, Hotspots and Plumes: Origin, Ascent, and Interaction With the Lithosphere (S21), Conveners: H-C. Nataf (France), U. Achauer (France), U. Christensen (Germany), J. Phipps-Morgan (USA), J. VanDecar (USA), A. Vafidis (Greece)
- 28 Aug, Geophysical Features of the Urals and Other Mountain Belts(S22, Co-Sponsored by ICL/ILP) Conveners: C. Juhlin (Sweden), S. Kashubin (Russia), A. Perez-Estuan (Spain), F. Wenzel (Germany), D. Papanikolaou (Greece)
- 28 Aug, New Approaches to the Estimation of Earthquake Size (S23) Conveners: J. Nabelek (USA), N. Kondorskaya (Russia), A. Kiratzi (Greece)

# Workshops

- 19 Aug, Earthquake Early Warning Systems (W1), Conveners: W. Lee (USA), J.M. Espinosa-Aranda (Mexico), E. Scordilis (Greece)
- 19-20 Aug, Elaboration of Historical Earthquake Data With Emphasis on the Aegean and Surrounding Area (W2), Conveners: G. Karakaisis (Greece), M. Stucchi (Italy), V. Kouskouna (Greece)
- 19-20 Aug, Towards Reference Earth Models (W3, Co-Sponsored by SEDI), Conveners: G. Masters (USA), B.L.N. Kennett (Australia), Y. Ricard (France)
- 20-21 Aug, Lithospheric Structure: A Key for Understanding Seismotectonics and Seismic Hazard of the Carpatho-Balkan Region (W4, Co-Sponsored by ICL/ILP), Conveners: I. Kuznetzov (Russia), M. Radulian (Romania), G.F. Panza (Italy), C. Papazachos (Greece)

- 20 Aug, New Concepts and Procedures in Earthquake Hazard Assessment (W5), Conveners: V. Schenk (Czech Republic), D. Mayer-Rosa (Switzerland), R. McGuire (USA), C. Papaioannou (Greece)
- 20 Aug, Electromagnetic Signals Related to Tectonic Processes (W6), Conveners: S. Park (USA), J. Zschau (Germany), P. Varotsos (Greece)
- 21-22 Aug, Earthquake Site Effects and Models for Assessing the Site Response (W7), Conveners: K. Kudo (Japan), P-Y. Bard (France), W.D Iwan (USA), B. Tucker (USA), G. Gazetas (Greece)
- 21 Aug, Recent Strong Earthquakes in European-Mediterranean Region (W8), Conveners: K. Makropoulos (Greece), D. Hatzfeld (France), D. Papastamatiou (Greece)
- 21 Aug, Educating the Public About Earthquake Hazards and Risk (W9), Conveners: J. Andrews (USA), Gu, Jian-hua (China), K. Ioannides (Greece)
- 22 Aug, Earthquake Preparation Process: Quantitative Method and Hypothesis Testing (W10), Conveners: M. Wyss (USA), R. Console (Italy), D. Rhoades (New Zealand), J. Latoussakis (Greece)
- 25 Aug, Strong Ground Motion: Recent Trends in Networking, Database and Data Processing (W11), Conveners: V. Margaris (Greece), D. Rinaldis (Italy), G. Brady (USA), X. Goula (Spain)
- 22 Aug, Comparison of Techniques for Computing Synthetic Seismograms for 3-D Global Earth Models (W12), Conveners: H. Igel (UK), R. Geller (Japan), B. Romanowicz (USA)
- 25-26 Aug, Triggered/Induced Earthquakes (W13), Conveners: H. Gupta (India), J. Gomberg (USA), P. Hatzidimitriou (Greece)
- 25 Aug, Advanced Geoinformation Technologies for Earthquake Hazard and Seismic Risk Assessment (W14), Conveners: Y.S. Tyupkin (Russia) and V.G. Gitis (Russia), K. Stylianides (Greece), N. Voulgaris (Greece)

- 25 Aug, Manual of Seismological Observatory Practice (W15), Conveners: P. Bormann (Germany), G. Choy (USA), J. Baskoutas (Greece)
- 26 Aug, Long Period Studies of Lithospheric Structure and Engineering Seismology (W16), Conveners: H. Bungum (Norway), G. Woo (UK), J. Kalogeras (Greece)
- 26 Aug, The Global Seismic Hazard Assessment Program 1992-1997 (W17, Co-Sponsored by ICL/ILP), Conveners: P. Basham (Canada), V.K. Gaur (India), K. Shedlock (USA), T. Tsapanos (Greece)
- 26 Aug, Instrumentation Prospects for the Future (W18), Conveners: J. Berger (USA), K. Suyehiro (Japan), D. Fountoulis (Greece)
- 27 Aug, Multi-Parameter and Multi-Scale Analysis of Seismicity and Related Fields (W19), Conveners: G.A. Sobolev (Russia), I. Main (UK), V.B. Smirnov (Russia), G. Tsokas (Greece).
- 27 Aug, Thermal Regimes in the Continental and Oceanic Lithosphere (W20), Conveners: C. Clauser (Germany), V. Cermak (Czech Republic), M. Yamano (Japan)
- 28 Aug, Reducing Earthquake Losses in the Eastern Mediterranean Region (W21, Co-Sponsored by UNESCO), Conveners: W. Hays (USA), B. Feigner (France), M.W. Jaradat (Jordan), E. Ibrahim (Egypt), J. Drakopoulos (Greece), D. Papanastasiou (Greece)
- 28 Aug, Tsunami Sources (W22), Conveners: C. Koutitas (Greece), V.K. Gusiakov (Russia), F. Imamura (Japan), S. Tinti (Italy), G.A. Papadopoulos (Greece)
- 28 Aug, Exploiting Massive Seismological Data Sets: Theory and Practice (W23), Conveners: R. Snieder (The Netherlands), P. Malischewsky (Germany), G. Nolet (USA), D. Panagiotopoulos (Greece)

#### **Other Scheduled Meetings**

#### Commissions

20 Aug, Commission on Controlled Source Seismology (C1)

- 21 Aug, Commission on Earthquake Hazard and Prediction (C2)
- 27 Aug, Commission on Geodynamics and Tectonophysics (C3)
- 21 Aug, International Heat Flow Commission (C4)
- 17 Aug, International Ocean Network (C5, canceled)
- 25 Aug, Commission on Practice (C6)
- 25 Aug, Commission on Wave Propagation (C7)
- 19, 20 Aug, European Seismological Commission (C8)
- 24, 27 Aug, Federation of Digital broadband Seismograph Networks (C9)
- 21 Aug, Commission for International Decade for Natural Disaster Reduction (C10)
- 22 Aug, Committee for Developing Countries (C11)
- 22 Aug, Commission on Education (C13)
- 19 Aug, Asian Seismological Commission (C15)

# Sub-Commissions

- 22 Aug, Sub-Commission on Earthquake Hazard and Risk (SC21, Earthquake Hazard and Prediction)
- 22 Aug, Sub-Commission on Earthquake Prediction (SC22, Earthquake Hazard and Prediction)
- 27 Aug, Sub-Commission on Modeling the Earthquake Source (SC23, Earthquake Hazard and Prediction)
- 20 Aug, Sub-Commission on Strong Motion Seismology (SC24, Earthquake Hazard and Prediction)
- 25 Aug, Sub-Commission on Anisotropy (SC71, Wave Propagation)
- 25 Aug, Sub-Commission on Heterogeneity (SC72, Wave Propagation)
- 19 Aug, Sub-Commission on Training (SC81, Education)

Working Groups

- 20 Aug, Working Group on Seismic Hazard Assessment Techniques (WG21, Earthquake Hazard and Prediction)
- 21 Aug, Working Group on Effects of Surface Geology on Seismic Motion (WG22, Earthquake Hazard and Prediction)
- 20 Aug, Working Group on Regionalization (WG62, Practice)
- 26 Aug, Working Group on Manual of Seismological Observatory Practice (WG63, Practice)
- 20 Aug, Working Group on Personal Computers (WG64, Practice)
- 20 Aug, Working Group on International Seismological Observing Period (WG65, *canceled*, Practice)
- 20 August, Working Group on International Data Centers (WG66, Practice)

Special Interest Groups

- 26, 27 Aug, Global Seismic Hazard Assessment Program (GSHAP) (SIG1)
- 26 Aug, ORFEUS Workshop: Information and Waveform Dissemination (SIG2)
- 19 Aug, ESC Working Group on Seismic Hazard Assessment: Seismic Ground Motion in Large Urban Areas (SIG3)
- 25 Aug, IGCP-382: Seismotectonics and Seismic Hazard Assessment of the Mediterranean (SIG4)
- 21, 22 Aug, EMSC/CSEM (SIG5)
- 22 Aug, Working Group on Strong Motion Data (SIG7)
- 21 Aug, Future of the Journal Geofisica Internacional (SIG 8)
- 21 Aug, EAEE-TG6 & ESC-WG4 (Joint Meeting) (SIG9)

# Closing Plenary Session 28 August 1997

Present: Prof. C. Froidevaux (President) in the Chair and about 300 delegates and guests.

The President opened the meeting at 1415 and welcomed participants.

#### President's Report

The President reported that at this Assembly we had 1050 participants from 62 countries (396 European, 291 Greece, 200 Asia, 113 North America, 10 Africa, 10 Oceania, and 9 South America) and 1411 submitted abstracts.

The President noted that there were many activities besides General IASPEI its Assemblies. For example, there was a meeting on geodynamics sponsored by the Commission on Geodynamics and Tectonics in Germany only two weeks before this assembly. Next week there will be a meeting in Germany on megacities and risk, an emerging major theme for IUGG in future, that will be followed up with related meetings in Chile (IDNDR with IAVCEI) and Istanbul in 1998. In 1996 IASPEI, through its commissions, has sponsored meetings in many countries, including Zimbabwe (Bulawayo). (Stanford, USA Asilomar), UK (London), Czech Republic, Iceland (Reykjavik/ESC), and Kazakstan (Alama Ata/IDNDR).

The President also noted that IASPEI newsletters are issued periodically by the Association, the Commission for IDNDR, and the Committee for Developing Countries. He called attention to activities of the newly formed Asian Seismological Commission, including a Regional Assembly held at Tangshan, China, during 1-3 August 1996, and a similar assembly being planned at Hyderabad, India, in December 1998, and especially encouraged participation of more Japanese scientists. The President noted IASPEI's increased interest in promoting training courses under its Sub-Commission on Training. Finally, he called attention to areas where IASPEI cooperates with other IUGG associations, in particular the International Heat Flow Commission and (with IAVCEI) the Inter-Association Commissions on Volcano Seismology and on Physical and Chemical Properties of Materials of the Earth's Interior.

#### Secretary-General's Report

The Secretary-General, Dr. E.R. Engdahl, reviewed the 1995 and 1996 Financial Reports for the Association. Major sources of income during this period were IUGG Allocations,

Grants, and Sales of Publications. Major expenditures were Administration, General Assemblies, and support for IASPEI sponsored Symposia and Scientific Meetings. He noted that in future a significant decline in grant income is anticipated that can hopefully be offset by increased publications income.

The Secretary-General reported that the Association Newsletter is now being more widely distributed by e-mail. However, a hard copy version is also being mailed to scientists without Internet connections with the assistance of the National Geophysical Research Institute at Hyderabad, India. He noted that further development of the IASPEI Home Page on the World Wide Web is underway and that a IASPEI Brochure, which describes who we are and what we do, is now available both in hard copy and on the Home Page.

During the Assembly one IASPEI Bureau meeting was held jointly with the Local Organizing Committee and four business meetings of the IASPEI Executive Committee were held, the last of these with IASPEI commission chairs. In addition, the Secretary-General reported that most **IASPEI** commissions, sub-commissions, and working groups, as well as a number of special interest groups, held scheduled meetings during this assembly. He announced several important changes in commission structure that were confirmed by the IASPEI Executive Committee:

Committee on Developing Countries - The Committee Chair , R.D. Adams, resigned and has been succeeded by G. Gibson (Australia)

Commission on Wave Propagation - The Commission Chair, C. Thomson, resigned and has been succeeded by J. Park (USA).

Federation of Digital Broadband Seismograph Networks - The newly elected Chair is Y. Fukao, succeeding J-P. Montagner

The Secretary-General reported that progress had been made in developing the IASPEI scientific program for the 22nd General Assembly of IUGG and 30th General Assembly of IASPEI, to be held in Birmingham, England, 19-30 July 1999. As an experiment in developing the program for IASPEI sessions, the IASPEI Executive Committee has decided that

the Association program should be based on scientific themes. For each theme there would be assigned a program group consisting of three persons that would include one member of the Executive Committee. Proposals are requested for topics within each theme to be used in constructing a broad scope for that theme. Papers would be submitted to themes and then would be assigned by the program group to appropriate topics as determined by the submitted abstracts. Conveners would then be assigned to theme topics as necessary to develop sessions.

The scientific themes and IASPEI Executive Committee member assigned to the group for each theme are:

- 1. The nature of seismic sources and the prediction of earthquakes [Gupta]
- 2. Seismotectonics [Engdahl]
- 3. Strong ground motion, earthquake hazard and risk [Xie Li-Li]
- 4. Earth structure and geodynamics (inc. heat flow) [Kennett/Fowler(ILP)]
- 5. Physics and chemistry of Earth material (inter-association) [Jeanloz]
- 6. Seismological observation and interpretation [Giardini]
- 7. Education and outreach [Hamza]

The Secretary-General announced that Hanoi, Vietnam, has been selected by the Executive Committee as the venue for the 31st IASPEI General Assembly in 2001, which will be held jointly with IAGA. Dr. Engdahl reviewed the factors upon which the Executive Committee reached its decision. The joint assembly will be held during the last two weeks of August in a constructed fully air-conditioned Conference Center which will have large lecture rooms and other modern appointments. Near the Conference Centre there are Dormitory Houses for students which will be available to participants, restaurants providing meals at low prices, and hotels with a wide range of rates. The LOC will use Internet to communicate with participants and carry out the tasks of abstract submission and meeting pre-registration. The Registration Fee will be less than US\$400 and travel assistance will be provided to participants who would not otherwise have support to attend. The Scientific Program for this Inter-Association Assembly will be developed at the 1999 IUGG General Assembly in Birmingham. The selection of the Hanoi venue was unanimously approved by voice vote.

# Adoption of Resolutions

Prof. B.L.N. Kennett, Chairman of the Resolutions Committee, then proposed the Resolutions given below. They were accepted without modification.

#### Appointment of Nominations Committee

The President announced the composition of the Nominating Committee to propose a slate of officers at the 1999 General Assembly. The members are Profs. Claude Froidevaux (France, Chairman), Shamita Das (United Kingdom), Chen Yun-tai (China), Kurt Lambeck (Australia), and Thomas Jordan (USA). The President, First Vice-President, Second Vice-President, Secretary-General, and four additional Members of the Executive Committee should be nominated. Nominations should be sent directly to:

Prof. Claude Froidevaux Departement Terre-Atmosphere-Ocean Ecole Normale Superieure 24, rue Lhomond F-75231 Paris Cedex 05 FRANCE

Tel: 33 1 44 32 22 13 Fax: 33 1 44 32 22 00

E-mail: froidevo@geophy.ens.fr

#### Other Business

There being no further business, the President once more thanked the Local Organizing Committee and expressed the hope that participants had enjoyed their stay in Greece.

The President closed the meeting at 1515.

# IASPEI Resolutions Adopted Thessaloniki, Greece 28 August 1997

#### 1. Strong Ground Motion Data

**Recognizing** the critical importance of strong ground-motion data in the evaluation of seismic hazard analysis, earthquake resistant design and other aspects of seismic risk reduction,

IASPEI **urges** operators of seismic strong ground-motion instrumentation to make ground-motion recordings publicly available as soon as possible, for example by using the World-Wide Web.

# 2. Test Areas for Earthquake Prediction

**Recognizing** that research into earthquake prediction needs to be carried out over long time scales with extensive and detailed observation at substantial cost, and

**aware** that many nations face serious threats to their populations with limited resources and skills,

IASPEI **urges** the organization of additional multinational test areas in different tectonic settings where high level research efforts are already in progress, for example: Kamchatka (plate-subduction), Iceland (plate spreading), Yunnan (intercontinental strike-slip), Gulf of Corinth (continental rifting), Beijing (intracontinental) and

**recommends** that host countries welcome participants from all nations and in due course make the data available to the international research community in computer accessible form.

#### 3. Global Seismic Hazard Assessment Project

**Recognizing** the substantial achievements on the five years of the Global Seismic Hazard Assessment Project (GSHAP)

IASPEI **commends** the compilation of a global assessment of seismic hazard,

**urges** all nations to collaborate to extend coverage to the full globe, and

**recommends** its Commissions and Committees to pursue the task in the years ahead.

#### 4. Training

**Recognizing** the importance of maintaining high quality expertise world-wide in earthquake engineering and its interface with seismology and

**appreciating** the unique contribution made by the Japanese Government to the International Institute of Seismology and Earthquake Engineering (IISEE) over nearly 40 years to training seismologists and earthquake engineers, particularly from developing countries,

IASPEI **urges** the continuation and expansion of support for the IISEE as a major contribution to training to aid the assessment and mitigation of earthquake hazard.

# 5. Appreciation

**Recognizing** the effort required to organize a General Assembly,

IASPEI **thanks** and **congratulates** the members of the Local Organizing Committee for a most memorable meeting in Thessaloniki.

# Professor Stephan Mueller 1930-1997

Stephan Mueller will be mourned by all, but by no group more than his colleagues in IASPEI. He occupied successively many major posts in our Association. He was President of the European Seismological Commission 1972-1976 before joining the Bureau as First Vice-President in 1983, serving as President from 1987 to 1991, and continuing on the Executive Committee until 1995. This simple listing of offices cannot convey the contribution he made to the Association. He provided not only sound administrative guidance, but also genuine scientific leadership.

As Director of the Institute of Geophysics at Zurich, he was responsible for guiding research in all branches of geophysics, but his own personal interests became concentrated on the study of the deep structure of the lithosphere. As well as work within Switzerland and the Alpine region, he initiated the European Geotraverse project, which successfully studied the structure of the lithosphere from Scandinavia to Tunisia. Only someone with his unique combination of scientific knowledge, administrative ability and diplomatic skill could have brought such a project to fruition.

He never shirked responsibility, nor was he afraid to take difficult decisions, and once he had undertaken a task, he would devote all his attention to it. In addition to his IASPEI responsibilities, he held many other scientific posts. He was Chairman of the Governing Council of the International Seismological

Centre from 1975 to 1985, during a time of more than usual financial and administrative difficulties. In the broader field he presided over the European Geophysical Society from 1978 to 1980, and was a member of the Executive Committee of Academia Europaea.

We remember him as a man of immense modesty, shy and at times formal, but always kind and friendly, inspiring confidence among his colleagues and students. In his work, he always had the loving support of his wife Doris, and their sons, to whom we extend our heartfelt sympathy.

R.D. Adams, Past IASPEI Secretary-General

# Professor Ziro Suzuki 1923-1997

Professor Ziro Suzuki was born in 1923, a few months before the Great Kwanto earthquake of that year. He will be remembered by his IASPEI colleagues mainly for his long association with the topic of earthquake prediction, but his career covered many other branches of geophysics as well. In his early work Professor Suzuki pioneered Japanese studies of instrumental observations of microearthquakes and crustal structure from explosion seismology, and contributed to studies of earthquake statistics.

After beginning his career at Tokyo University, he moved to Tohoku University in 1951, which was his academic home for much of the remainder of his career, and where he rose to be Dean of the Faculty of Science. In 1986 he retired from Tohoku University with the title of Emeritus Professor, and continued his work at Kogakuin University. He has been posthumously awarded the Second Order of Merit by the Japanese Government for his outstanding contribution to the development of seismology.

In IASPEI he became Vice-President in 1979, and was President from 1983 to 1987, remaining on the Executive Committee until 1991. During his Presidency IASPEI held its first Regional Assembly at Hyderabad, India, in 1984, and he was also closely involved in the highly successful General Assembly in Tokyo in 1985.

As well as being a seismologist of great practical knowledge and skill, in his official duties he showed great wisdom and patience, and had the ability to solve difficulties in a way that would satisfy all concerned. He was invariably courteous and polite, and combined an ability to strive for what he believed to be right while retaining the respect of all. He will be sadly missed, not only in his own country, but by seismologists everywhere.

R.D. Adams, Past IASPEI Secretary-General

# **PUBLICATIONS**

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Giardini, D. (Editor). Special Issue. Lateral Heterogeneity and Earthquake Location, Proceedings of the IASPEI Symposium held during the 26th General Assembly in Vienna, Austria, Physics of the Earth and Planetary Interiors, v. 75, 1992.

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Franck, S. and Ahrens, T. (Editors). Special Issue. Structure, Composition and Evolution of the Earth's Interior, Proceedings of IASPEI/SEDI Symposia held during the 27th General Assembly in Wellington, New Zealand, Physics of the Earth and Planetary Interiors, v. 92, 1995.

Cermak, V. and Rybach, L. (Editors). Special Issue. Geothermal Aspects of Lower Crustal Structure, Heat Flow and Hydrothermal Circulation, Proceedings of the IASPEI Symposium held during the 27th General Assembly in Wellington, New Zealand, Tectonophysics, v. 257, 1996.

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#### FORTHCOMING MEETINGS

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

1998 January 12-15

INTERNATIONAL WORKSHOP ON ADVANCED METHODS IN SEISMIC ANALYSIS, Dead Sea, ISRAEL Shalheveth Freier Center, 81800 Yavne, ISRAEL (Tel: 972 8 9434399; Fax: 972 8 9434171; E-mail: workshop@ndc.soreq.gov.il; WWW: http://ndc.soreq.gov.il)

1998 January 25-29

CHAPMAN CONFERENCE ON STABLE CONTINENTAL REGION (SCR) EARTHQUAKES, Hyderabad, INDIA AGU Meetings Department, 2000 Florida Avenue, NW, Washington, DC 20009, USA (Tel: 1 202 462 6900; Fax: 1 202 328 0566; E-mail: meetinginfo@kosmos.agu.org; WWW: http://www.agu.org)

1998 February 15-24

WINTER SCHOOL ON MID-OCEAN RIDGE PROCESSES IN OMAN

Muscat, OMAN

RIDGE Office, Ocean Process Analysis Laboratory, Morse Hall, University of New Hampshire, Dirham, NH 03824-3525, USA (Tel: 1 603 862 4051; Fax: 1 603 862 0083; E-mail: ridge@unh.edu; WWW: http://ridge.unh.edu/meetings/oman/)

1998 February 17-20

6TH ZONENSHAIN INTERNATIONAL CONFERENCE ON PLATE TECTONICS Moscow, RUSSIA

Dr. Elena Pristavakina, Institute of Oceanology, Nakhimosky prosp. 36, Moscow 117851, RUSSIA (Tel: 7 095 124 7396; Fax: 7 095 124

5983/124 7942/932 8889; E-mail: prist@sbg.geol.msu.su)

1998 March 10-13 GEOCHEMICAL EARTH REFERENCE MODEL (GERM) WORKSHOP La Jolla, USA

(E-mail: germ@igpp.ucsd.edu; WWW: http://www-ep.es.llnl.gov/germ)

1998 April 13-17

SEVENTH INTERNATIONAL KIMBERLITE **CONFERENCE** 

Cape Town, SOUTH AFRICA

7IKC, Geological Sciences, University of Cape Town, Private Bag, Rondebosch, 7700, SOUTH AFRICA (Fax: 27 21 650 3783;

E-mail: 7ikc@geology.uct.ac.za; WWW: http://www.uct.ac.za/depts/geolsci/ikc/)

1998 April 14-18

GEOSCIENCES 98, Keele University, UK The Conference Department, The Geological Society, Burlington House, Piccadilly, London W1V 0JU, UK (Tel: 44 171 434 9944; Fax: 44 171 439 8975; E-mail: lakinj@geolsoc.org.uk; WWW: http://www.geolsoc.org.uk/)

1998 April 20-24 XXII GENERAL ASSEMBLY OF THE EUROPEAN GEOPHYSICAL SOCIETY Nice, FRANCE

EGS Office, Max-Planck-Str. 13, 37191 Katlenburg-Lindau, GERMANY (Tel: 49 5556 1440; Fax: 49 5556 4709; E-mail: egs@copernicus.org; WWW: http://www.copernicus.org/EGS/EGS.html)

1998 April 27-30

IDNDR INTERNATIONAL CONFERENCE ON MODERN PREPARATION AND RESPONSE SYSTEMS FOR EARTHQUAKE, TSUNAMI AND VOLCANIC HAZARDS,

Santiago, CHILE

International IDNDR Conference, c/o IUGG Chile National Committee, Instituto Geografico Militar - Chile, Nueva Santa Isabel 1640, Santiago, CHILE

(Tel: 56 2 698 8278; Fax: 56 2 698 8278; E-mail: seisvolc@conf.dgf.uchile.cl)

1998 May 26-29

AMERICAN GEOPHYSICAL UNION SPRING **MEETING** Boston, USA

AGU Meetings Department, 2000 Florida Avenue, NW, Washington, DC 20009, USA (Tel: 1 202 462 6900; Fax: 1 202 328 0566; E-mail: meetinginfo@kosmos.agu.org; WWW: http://www.agu.org)

1998 May 31-June4

SIXTH U.S. NATIONAL CONFERENCE ON EARTHQUAKE ENGINEERING Seattle, Washington, USA EERI, 499 14th Street, Suite 320, Oakland,

California 94612-1934, USA (Tel: 1 510 451 0905; Fax: 1 510 451 5411;

E-mail: eeri@eeri.org)

1998 June 2-4

ANNUAL INTERNATIONAL SEMINAR DIFFRACTION DAYS '98

St. Petersburg, RUSSIA

Prof. V.S. Buldyrev, Institute of Physics, St. Petersburg University, 1 Ulianivskaja,

Petrodvoretz 198904, RUSSIA (Fax: 7812428

7240; E-mail: buld@mph.niif.spb.su;

WWW: http://snoopy.phys.spbu.ru/~grikurov/dd98/dd98.html)

1998 June 21-26

GORDON CONFERENCE ON RESEARCH AT HIGH PRESSURE

Meriden, New Hampshire, USA

Gordon Research Conferences, University of Rhode Island, P.O. Box 984, West Kingston, RI 02892-0984, USA

(Tel: 1 401 783 4011; Fax: 1 401 783 7644; E-mail: app@grcmail.grc.uri.edu; WWW: http://www.grc.uri.edu/)

1998 July 5-10

THE 6TH SEDI SYMPOSIUM Tours, FRANCE

Prague 8, CZECH REPUBLIC

SEDI 98 Secretariat, LGIT, BP 53, 38041 Grenoble Cedex 9, FRANCE (WWW: http://sedi.obs.ujf-grenoble.fr/sedi.html)

1998 July 7-11

1ST IMACS CONFERENCE ON
MATHEMATICAL MODELLING AND
COMPUTATIONAL METHODS IN
MECHANICS AND GEODYNAMICS
Prague, CZECH REPUBLIC
MODELLING '98, Institute of Computer
Science, Academy of Sciences of the Czech
Republic, Pod vodarenskou vezi 2, CZ - 182 07

(E-mail: modelling98@uivt.cas.cz)

1998 July 21-24

WESTERN PACIFIC GEOPHYSICS

MEETING, Taipai, TAIWAN

AGU Meetings Department, 2000 Florida Avenue, NW, Washington, DC 20009, USA (Tel: 1 202 462 6900; Fax: 1 202 328 0566;

E-mail: meetinginfo@kosmos.agu.org; WWW:

http://www.agu.org)

1998 August 23-28

XXVI GENERAL ASSEMBLY OF THE

EUROPEAN SEISMOLOGICAL

COMMISSION, Tel Aviv, ISRAEL

Assembly Secretariat, c/o Ortra Ltd, Nirim 1 St., P.O.B. 9352, Tel Aviv, ISRAEL

(Tel: 972 3 638 4444; Fax: 972 3 638 4455;

E-mail: esc@ortra.co.il; WWW:

http://www.iprg.energy.il.8080/sd/esc.html)

1998 September 14-21

2ND INTERNATIONAL CONFERENCE ON

EARTHQUAKE HAZARD AND SEISMIC

RISK REDUCTION

Yerevan, ARMENIA

National Survey for Seismic Protection,

Davidashen-Massiv 4, 375054, Yerevan,

ARMENIA (Tel: 374 2 28 28 11 / 28 68 13;

Fax: 374 2 15 11 08 (AT&T) / 28 68 13;

E-mail: presidnt@nssp.yerphi.am)

1998 September 21-25

8TH CONGRESS OF THE INTERNATIONAL

ASSOCIATION OF ENGINEERING

**GEOLOGY** 

Vancouver, British Columbia, CANADA Ms Kim Meidal, Congress Secretariat, 8th Congress IAEG, c/o BC Hydro, 6911 Southpoint Drive, Burnaby, BC, CANADA, V3N 4X8 (Tel: 1 604 528 2421; Fax: 1 604 528 2558; E-mail:

kim.meidal@bchydro.bc.ca)

1998 September 21-25

EARTHQUAKE PROGNOSTICS WORLD

FORUM: SEISMIC SAFETY OF BIG CITIES,

Istanbul, TURKEY

Turkish Earthquake Foundation, Technical University of Istanbul, Faculty for Civil

Engineering, 80626 Ayazaga/Istanbul, TURKEY

(Fax: 90 212 2856656)

1998 September 26-October 5

IUGG/SSB International Training Course on

Continental Earthquakes and Mitigation of Seismic Hazard, Beijing, CHINA Institute of Geophysics, SSB, No. 5 Minzuxueyuan Namlu, Haidian District, Beijing 100081, CHINA

(Tel: 86 10 684 67978 / 17859; Fax: 86 10 684 15372; E-mail: wuzl@cdsndmc.css.gov / suxl@cdsndmc.css.gov)

1998 October 6-8
1ST INTERNATIONAL CONFERENCE ON
COMPUTER SIMULATION IN RISK
ANALYSIS AND HAZARD MITIGATION
Valencia, SPAIN
CONFERENCE SECRETARIAT, Paula
Dougherty-Young, RISK ANALYSIS98,
Wessex Institute of Technology, Ashurst Lodge,
Ashurst, Southampton, SO40 7AA, UK (Tel: 44
1703 293223; Fax: 44 1703 292853; E-mail:
Paula@wessex.ac.uk;

1998 November 25-27
THE 10TH JAPAN EARTHQUAKE
ENGINEERING SYMPOSIUM 1998
Yokohama, JAPAN
Organizing Committee, The 10th JEES, c/o
Architectural Institute of Japan, 26-20, Shiba 5chome, Minato-ku Tokyo, 108 JAPAN
(Tel: 81 3 3456 2051; Fax: 81 3 3456 2058;
E-mail: jees@aij.or.jp; WWW:
http://www.aij.or.jp/jees/index.html

WWW: http://www.wessex.ac.uk)

1998 December 1-3 SECOND INTERNATIONAL SYMPOSIUM ON THE EFFECTS OF SURFACE GEOLOGY ON SEISMIC MOTION, Yokohama, JAPAN EGS98 (Fax: 81 3 3508 8101; E-mail: kawase@ori.shimz.co.jp; WWW: http://sms.dpri.kyoto-u.ac.jp/EGS98.html)

1998 December 1-3
2ND MEETING OF ASIAN
SEISMOLOGICAL COMMISSION &
SYMPOSIUM ON EARTHQUAKE
HAZARD ASSESSMENT AND RELATED
TOPICS, Hyderabad, INDIA
The Organising Secretary, ASC98, National
Geophysical Research Institute, Uppal Road,
Hyderabad - 500 007, INDIA
(Tel: 91 40 717 0141 Fax: 91 40 717 1564;
E-mail: asc98@csngri.ren.nic.in)

1998 December 6-10
AMERICAN GEOPHYSICAL UNION FALL
MEETING
San Francisco, USA
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E-mail: meetinginfo@kosmos.agu.org; WWW: http://www.agu.org)

1999 JULY 19-30 22ND IUGG GENERAL ASSEMBLY Birmingham, UK (WWW: http://www.bham.ac.uk/IUGG99/ home.htm)