



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



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International Workshop on Nature of Crustal Conductivity Moscow, Russia 14-17, March 1994

The workshop was held in Moscow, March 14-17, 1994 by the Geophysical Centre and Seismological Centre of the Russian Academy of Science. It was sponsored by the IUGG, IASPEI and IAGA.

Twenty-five invited papers were presented on four topics: geoelectrical information on crustal conductivity; other geophysical fields (seismics and geothermics); petrological and geochemical evidence for fluids, cracks and porosity in the consolidated crust (especially by the Kola deep borehole data); and sources of EM anomalies (fluids and graphite).

Results of deep magnetotelluric studies were presented for central Asia (M. Berdichevski), Armenia (I. Feldman and M. Berdichevski), northern Caucasus (I. Feldman and B. Okuleski), Ukrainian Shield (S. Kulik et al.), Baltic Shield (A. Kovtun), Karelia (B. Klabukov), Baikal Rift zone (A. Popov), eastern Transbaikalia (A. Zhamaletdinov and D. Tokarev) and Cascadia Basin (I. Varentsov et al.). Both local conducting anomalies and wide conducting layers were considered.

N. Pavlencova presented a summary of the refraction and reflection seismics, showing a clear difference between the upper and lower crust. V. Gordienko discussed the geothermal conditions in the continental crust that could influence the electrical conductivity. Interesting information about the crustal structure of the Japan Sea basin revealed by ocean bottom seismometers was presented in

the paper of J. Kasahara, K. Mochizuki and N. Hirata. One of the geological structures where the role of fluids is more clear is a subduction zone. I.S. Sacks presented a model of the fluids in the subduction zone beneath Japan derived from seismics and geothermics.

V. Nikolaevski gave some mechanical evidence for increase of microcracks in deep crust. V. Morozov considered geomechanical aspects of the nature of crustal electrical conductivity. Two extremely interesting papers treated direct measurements of porosity and permeability in the 12-km deep Kola borehole (Yu. Kuznetsov) and study of fluid inclusions in samples from that borehole (I. Banshikova). Most inclusions are brines with the NaCl or CaCl concentration more than 30%. Hydrological problems of deep fluids were considered by I. Kissin.

L. Vanyan presented estimations of fluid content in the upper 10-12 km of the consolidated crust by geoelectrical data. He mentioned the importance of the TM-mode of the magnetotelluric field and DC-soundings that are more sensitive to the resistivity of the upper crust. Specific resistivity of the upper crust of shields is as high as 10^5 ohm-m. This value corresponds to the 0.1% of brine content in the upper crust. The estimation is in agreement with the Kola borehole data. According to the EMSLAB data the upper crust resistivity above a subduction zone is two orders of magnitude lower and porosity higher. Both in shields and active zones upper crust permeability derived from the resistivity data is lower than 10^{-20} m². This prevents fluid exchange between the upper and deep crust. Endogenetic carbon and brines were considered by P. Ivankin and N. Nazarova. They defined the depth interval 5-15 km as the most favorable for graphite precipitation. A compilation of long narrow highly conducting anomalies in the former Soviet Union was

presented by A. Zhamaletdinov. He discussed the role of graphite in these anomalies. M. Rodkin considered the role of fluids in deep permeable shear zones. Ukrainian geophysicists (S. Kulik, V. Gordienko, et al.) considered simultaneous geothermal and magnetotelluric study of some local zones of tectonic activation at the Ukrainian Shield. Areas of increased heat flow are followed by the increase of asthenosphere conductivity.

Fruitful discussions took place every workshop day. These discussions as well as papers presented suggest a great interest of scientists from the former Soviet Union in the problems of the Earth's crust. A high level of most of the presentations was mentioned by the workshop participants. Enthusiasm was a challenge for well-known economical problems.

L.L. Vanyan and I.S. Sacks, Co-Chairman, Inter-Association ELAS Working Group

**Regional Seismological Assembly
in South America
Brasilia, Brazil
22-26 August 1994**

**Opening Ceremony
22 August 1994**

The Opening Ceremony took place at 0900 on 22 August, beginning with a musical overture played by the "Senhoritas" orchestra, with the speakers being introduced by a mistress of ceremony, Miss Renata La Porta Arrobas.

The Local Organizing Committee Chairman, Ing. Alberto Veloso, welcomed all participants to the Assembly and gave some idea on the number of expected participants and about their countries of origin. Ing. Veloso mentioned that the Assembly was also the 27th anniversary celebration of the introduction of Seismology in the University of Brasilia.

The Regional Assembly was opened by the Representative of the Minister of Education, Dr. Mauricio Gama, who pointed out the social and scientific importance of Seismology for humankind and said that this branch of Geophysics is being developed in several important Brazilian universities.

The Vice-Dean of the University of Brasilia, Dr. Sergio Barroso, mentioned that it was a great pleasure for the University of Brasilia to

organize the Regional Seismological Assembly, assuring that the University of Brasilia administration has been given, during the past years, all possible support to help the development of Seismology in this university.

The next speaker was the Secretary of the Brazilian Civil Defense, General Luiz Doria, who explained the importance of the Brazilian Civil Defense to help the population against natural hazards, mentioning the latest earthquakes in the NE region of Brazil.

The President of IASPEI, Professor Alexei Nikolaev, mentioned that the Assembly is the second big event of IASPEI during 1994 in the Southern Hemisphere. This is connected with a need for detailed geophysical study of this area and with the expansion of geophysical research in South America, Australia and New Zealand.

The President of the ILP, Dr. Kevin Burke, said that the International Lithosphere Program involved geologists and geophysicists working together to address scientific problems. In South America efforts in connection with the International Decade for Natural Disaster Reduction had brought the two groups together in programs such as GSHAP, the results of which would be reported at the meeting. Dr. Burke expressed his pleasure at joining IASPEI scientists at the assembly and thanked the Brazilian hosts for their hospitality.

Then, the CERESIS Representative, Dr. Alberto Benavidez, from Uruguay, apologized for the absence of the President and Executive Director of CERESIS, due to personal and health problems, respectively, and used the opportunity to welcome the participants in the name of CERESIS.

Finally the UNESCO Representative in Brazil, Dr. Miguel Enriquez, expressed his satisfaction, on behalf of UNESCO, for being able to help in the sponsorship of this important event and he wished success to the Assembly.

**Opening Plenary
22 August 1994**

Present: Dr. E.R. Engdahl (Secretary-General, IASPEI) in the Chair, on behalf of CERESIS, and about 100 participants.

Dr. Engdahl opened the meeting at 0945 and welcomed those present. Neither the CERESIS

officers, J.C. Castano (President) and A. Giesecke (Director), nor their appointed representative, E. Kausel (Chile), could be present at this session and Dr. Engdahl extended apologies on their behalf.

Dr. Engdahl announced that the major items of business at this Assembly were listed in the Program. Included among the technical and business meetings to be held during the Assembly were a XIII Ordinary Meeting of CERESIS, a Steering Committee Meeting for the ILP Global Seismic Hazard Assessment Program (GSHAP), a Steering Committee Meeting for the PAIGH Seismic Hazard Assessment in Latin America Project, a Consortium Meeting for the Middle American Digital Seismographic Network (MIDAS) Project, and a meeting of the IASPEI Committee for Developing Countries.

Dr. Engdahl announced the composition of the Resolutions Committee as follows:

Prof. A. Sarria (Colombia), Chairman
Dr. J. Berrocal (Brazil)
Dr. R.D. Adams (United Kingdom)

The deadline for submission of draft resolutions was set at 1840, Thursday, August 25. Draft resolutions would be posted before the morning coffee break on Friday, August 26, and would be read and approved at the Closing Plenary.

Dr. Engdahl closed the session at 1000.

Scientific Program

Summaries of the sessions listed will be published in the IUGG Chronicle.

Invited Lectures

22 August (1400) Lithospheric Structure of the South American Plate (IL2), Lecturer: D. James (USA).

23 August (0800) Earthquake Hazard and Risk in Latin America (IL3), Lecturer: K. Shedlock (USA).

23 August(1400) Modern Techniques For Active Fault Characterization (IL4), Lecturer: G. Brogan (USA).

24 August (0800) The Andes: An Outsider's View (IL5), Lecturer: K. Burke (President, ILP).

24 August (1400) Broad Band Seismology and Its Applications (IL6), Lecturer: B. Dost (The Netherlands).

Symposia

22-23 August, Seismicity Studies and Evaluation of Earthquake Hazard and Risk (SSR), Conveners: P. Basham (Canada) and H. Yepes (Ecuador).

23-24 August, Tectonic Features and Lithospheric Structure (STL), Conveners: S. Kirby (USA), M. Assumpcao (Brazil) and L.A. Drake (Bolivia).

24-25 August, Stress and Source Mechanism (SSM), Conveners: A. Cisternas (France), D. Comte (Chile) and M. Araujo (Argentina).

24 August, Seismological Studies Related to Vulcanological Phenomena (SSV), Conveners: M. Hall (Ecuador), H. Meyer (Colombia) and J.J. Rueda (Spain).

25 August, Developments of Geothermal Studies (SGS), Conveners: S. Hurter (Brazil) and M. Munoz (Chile)

25 August, Deep and Recent Earthquakes in South American (Special Symposium) (SRE), Conveners: S. Kirby (USA) and M. Assumpcao (Brazil).

Round Table Meetings

24-25 August, Modern Seismographic Instrumentation in South America (RT1), Conveners: E.R. Engdahl (USA), J. Berrocal (Brazil) and B. Dost (The Netherlands).

26 August, Deep Seismic Reflection and Refraction Experiments (RT2), Conveners: W.D. Mooney (USA) and R.M.D. de Matos (Brazil)

26 August, Short-Term Variations in Geothermal Field Related to Seismicity (RT3), Conveners: G. Buntebarth (Germany) and V. Hamza (Brazil).

Technical and Business Meetings

23, 25 and 26 August, XIII Ordinary Meeting, CERESIS (TM1)

25 August, Steering Committee Meeting, Global Seismic Hazard Assessment Program (GSHAP) (TM2), Convener: D. Giardini (Italy)

25 August, Steering Committee Meeting, PAIGH Seismic Hazard Assessment in Latin

America Project. Presentation of CERESIS Seismic Hazard Map of S. America (TM3), Conveners: J. Castano (Argentina), J. Tanner (Canada), A. Benavidez (Uruguay)

25 August, Consortium Meeting, Middle American Digital Seismographic Network (MIDAS) Project (TM4), Convener: D.A. Novelo-Casanova (Mexico)

25 August, IASPEI Committee for Developing Countries Meeting (TM5), Convener: R. Adams (Chairman, CDC).

Training Course - Workshop

27 August - 02 September, Interactive Analysis of Digital Seismic Data, Coordinators: R.D. Adams (UK), E.A. Bergman (USA) and F. Scherbaum (Germany)

Closing Plenary 26 August 1994

Present: Ing. J.C. Castano (President, CERESIS) in the Chair, E.R. Engdahl (Secretary-General, IASPEI), and about 120 participants.

The President opened the meeting at 1200 and, after welcoming remarks, reported that there were 115 participants (94 Latin American and 20 from other regions) and 136 technical reports (as main author - 86 Latin American and 50 from other regions), both oral and poster, at this Assembly. The Scientific and the Social Programs were completely fulfilled. The Cocktail Party and Assembly Dinner were excellent, and we will have a beautiful chance to test Brazilian food at the Barbecue immediately following this Plenary. These events remain in our memory as bright pictures of the Regional Seismological Assembly in South America.

The President introduced Dr. E.R. Engdahl and asked him to elaborate on plans to produce a Meeting Report and publish the Proceedings of the Assembly. A Meeting Report will be prepared by E.R. Engdahl (IASPEI) and J. Berrocal (LOC). The report will be published in its entirety in the IUGG Chronicle and partly in the IASPEI Newsletter. A shortened version may also be prepared for submission to the American Geophysical Union publication EOS. The report will include the Resolutions in English. In order for the report to be timely, we have targeted an October 1 completion date. We ask your cooperation in

the preparation of summaries of the sessions you were responsible for, either as a Convener or as a session Chairperson.

It has been agreed to publish the Proceedings of the Assembly. IASPEI is under contract to Elsevier to provide them with the right of first refusal for publication of proceedings of meetings sponsored by IASPEI. We will request that Elsevier consider publication of the proceedings of this Assembly in the journal Tectonophysics. IASPEI has had prior experience with such a publication following the Regional Seismological Assembly in Africa. An issue entirely devoted to that Assembly was prepared which can serve as a guide. It included a Preface indicating the organizations involved in that Assembly. There were no page charges and free copies of the issue were given to first authors. The Editors will be J.C. Castano (CERESIS), E.R. Engdahl (IASPEI) and J. Berrocal (LOC). There will be a Call for Papers issued to all attendees within about one month by Dr. Engdahl. Titles of papers to be submitted will be needed immediately. The possibility of publishing extended abstracts as well is being considered. Papers must be submitted in English before January 1, 1995, and will be subject to review by two scientists. Guidelines for preparation of papers will be provided to contributors by Dr. Engdahl.

The President asked Dr. R.D. Adams, Member of the Resolutions Committee, to present the Resolutions given below. They were first read in English by Dr. Adams and then in Spanish by Ing. Castano. The Resolutions were accepted after some discussion with only minor modification.

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 Brazil.

The President closed the meeting at 1245.

Resolutions Adopted Brasilia, Brazil 26 August 1994

1. Deep Seismic Profiles

The Regional Seismological Assembly in South America

applauds the recent introduction by Petrobras of deep seismic profile data in South America, which has opened the door to a new field of

study in the evolution of the crust of this continent, and

aware that deep seismic profiles provide a unique opportunity for cooperative ventures involving government, commercial and academic agencies, to meet the rising demands for mineral resources, including petroleum and gas,

urges appropriate leading agencies in South America to join in cooperative ventures to conduct deep seismic reflection and refraction profiles in the key geologic provinces of this continent.

2. Exchange of Seismological Data

The Regional Seismological Assembly in South America

recognizing that the sharing of seismological data in South America will provide the opportunity for dramatic improvement in earthquake location,

endorses the operation of a Data Coordinating Center in the University of Chile, and

charges national, regional and institutional networks, including temporary stations and arrays, to supply the Center with phase arrival times for specified stations and events, and

Further **charges** the Center to supply to contributors the resulting origin parameters, and the relevant data on which they are based.

3. PAIGH Hazard Map

The Regional Seismological Assembly in South America

acknowledging and **supporting** the efforts led by the Pan-American Institute of Geography and History to compile a seismic hazard map for Latin America and the Caribbean, and

recognizing the importance of such maps in a global context,

urges the Steering Committee responsible for this map to formulate at their next meeting the necessary specifications to enable the map and accompanying reports to be completed in 1995.

4. Latin American Seismological Commission

The Regional Seismological Assembly in South America

taking note of the intense seismic activity in the eastern Circum-Pacific region and the

large population exposed to its associated earthquake hazards, and

conscious of the need to form a Latin American Seismological Commission in order to improve cooperation among interested individuals within the region and outside it,

requests IASPEI to establish a Latin American Seismological Commission to promote academic exchange, cooperation in joint projects, upgrading of seismological research and strengthening of measures to mitigate earthquake disasters.

5. Appreciation

The Regional Seismological Assembly in South America

aware of the great amount of work necessary for the successful organization and running of a major scientific meeting,

congratulates all those organizations and individuals involved, and especially

thanks the Banco do Brasil for providing the meeting facilities and the Local Organizing Committee and their assistants, ably led by Professor Alberto Veloso, for making this Assembly such a successful and enjoyable occasion.

21st General Assembly, IUGG 28th General Assembly, IASPEI Boulder, Colorado, U.S.A. 2-14 July 1995

The Third Circular for this Assembly, which will include abstract submittal information, registration materials, and information on accommodations, will shortly be distributed by the American Geophysical Union (AGU).

Abstracts *must* be sent to the American Geophysical Union by the abstract deadline of **February 1, 1995**, but you may send a copy to the lead convener for your session as well. Receipt of abstract will be acknowledged by AGU and your abstract sent on immediately to the appropriate lead conveners. The lead convener and co-conveners for each session will determine the scheduling of papers in their session and may also decide whether or not to assign an oral or poster presentation to your paper. In some cases conveners may suggest that a paper would fit better in a different session. The lead convener will have the final responsibility for the session content

and scheduling. The final program will be organized by the Secretary General/Program Committee Member, E.R. Engdahl, at AGU Headquarters, Washington, DC, April 3-5, 1995.

Requests for financial support should be sent to the lead conveners of sessions to which you will be submitting papers. Commission, Sub-Commission and Working Group Members may also send requests for financial support to their Commission Chairs.

To receive further information on the IUGG XXI General Assembly, contact the American Geophysical Union, 2000 Florida Avenue, N.W., Washington, DC 20009, USA, e-mail iugg_xxiga@kosmos.agu.org, telephone 1-202-464-6900, fax 1-202-328-0566.

A list of planned IASPEI-related symposia and workshops, and a program framework follows. Scopes will be published in the Third Circular.

Inter-Association Symposia

G JS1 Crustal Deformation Along Plate Boundaries (IAG, IASPEI).

Convener: J-B Minster, (IAG/IASPEI) Scripps Institute of Oceanography, University of California at San Diego, Institute of Geophysics and Planetary Science, La Jolla, CA 92093 (USA), tel. 619-534-5650; fax 619-534-2902; e-mail: jbminster@ucsd.edu.

G JS2 Geodetic, Remote Sensing And Seismic Methods For Monitoring Of Volcanic Activities (IAG, IASPEI, IAVCEI).

Lead convener: C. Reigber (IAG), GeoForschungs Zentrum (GRZ), Dept. of Kinematics and Dynamics of the Earth, Telegrafenberg A17, D-14473 Potsdam (Germany), tel. 49-331-288-1100 or 1114; e-mail: reigber@gfz-potsdam.dbp.de; fax 49-331-288-1111.

Co-conveners: A. Hasegawa (Japan), A. Linde (USA).

G JS3 Earth Rotation: An Interdisciplinary Approach To Earth System Science (IAG, IAMAS, IAPSO, IASPEI, IAGA, IAHS, SEDI).

Lead convener: M. Feissel (IAG), Observatoire de Paris, Central Bureau, Int'l Earth Rotation Service, 61, Avenue d'Observatoire, F-75014 Paris (France), tel. 33-1-4051-2226; fax 33-1-40-51-22-91; e-mail: feissel@iap.fr.

Co-conveners: D. Cartwright (UK), R. Hide (UK), R. Sabadini (Italy), J. Wahr (USA).

GA JS1.02 Relating Geophysical Measurements to Lithospheric Processes Through Continental Drilling (IAGA, IASPEI, ILP).

Lead convener: Volker Haak, GeoForschungs-Zentrum Potsdam, Telegrafenberg, D-14407 Potsdam (Germany); fax 49-331-288-1235; e-mail: vhaak@gfz.potsdam.de.

Co-conveners: J. Erzinger (Germany), J. Mutter (USA), D.R. Schmitt (Canada).

GA JS1.05/5.13 Geomagnetic Secular Variation And Core Flow Near The Core-Mantle Boundary (IAGA, IASPEI, SEDI).

Lead convener: G. Hulot, IGP, Laboratoire de Geomagnetisme et Palaeomagnetisme, CNRS UA279, 4 Place Jussieu, B89 Tour 24, 75252 Paris Cedex 05 (France); fax 33-1-44-27-3373; e-mail: ghulot@ipgp.jussieu.fr.

Co-convener: R.A. Langel (USA).

GA JS1.07 Lithospheric Anisotropy: Observations And Interpretation (IAGA, IASPEI, ILP).

Lead Convener: Marianne Mareschal, Genie mineral, CP6079, succ Centre Ville, Montreal H3C 3A7 (Canada); fax 1-514-340-4191; e-mail: marianne@geo.polymtl.ca.

Co-convener: Michael Bostock (Canada).

GA JS1.08 Geophysical Signatures Of Modern And Ancient Continental Margins (IAGA, IASPEI, ILP).

Lead convener: John R. Booker, Geophysics AK50, University of Washington, Seattle WA 98195 (USA); fax 1-206-543-0489; e-mail: booker@geophys.washington.edu.

Co-convener: M. Christina Pomposiello (Argentina).

GA JS5.18 Architecture Of The Continents: Interpretation Of Their Main Structural Elements From Magnetic Anomalies And Other Geophysical Data (IAGA, IASPEI, ILP).

Lead convener: V. Shapiro, Institute of Geophysics, Amundsen str 100, Ekaterinberg 620219 (Russia).

Co-conveners: J. Broome (Canada); L. Antoine (South Africa).

M JS14 Climatic Variability And Forcing Over The Past Millennium (IAMAS, IAVCEI, IASPEI, IAPSO).

Lead convener: M.C. MacCracken, Office of the USGCRP, 300 D Street, S.W., Suite 840, Washington, D.C. 20024 (USA); tel. 1-202-

554-6470; fax 1-202-554-7830; e-mail: mmaccracken@usgcrp.gov.

Co-conveners: C. Folland (UK), P.D. Jones (UK), H. Pollack (USA), A. Robock (USA), S. Self (USA), R. Stevenson (USA), G. Zielinski (USA).

PS JS4 Tsunami Disaster Reduction (IASPEI, IAPSO).

Lead convener: Dr. Eddie N. Bernard, Director, Pacific Marine Environment Laboratory, NOAA/PMEL Bin C 15700 - Bldg. 3, 7600 Sand Point Way NE, Seattle, WA 98115-0070, (USA); tel. 1-206-526-6800; e-mail: bernard@pmel.noaa.gov; fax 1-206-526-6815.

Co-conveners: Dr. Gerassimos A. Papadopoulos (Greece), Prof. Nobuo Shuto (Japan), Prof. Stefano Tinti (Italy).

S JS1 Earthquake Generation Processes: Environmental Aspects And Physical Modelling (IASPEI, IAVCEI).

Lead convener: M. Matsu'ura, Department of Earth and Planetary Physics, University of Tokyo, 2-11-16 Bunkyo-ku, Tokyo 113 (Japan); tel. 81-3-3812-2111 (x4318); e-mail: matsuura@geoph.s.u-tokyo.ac.jp; fax 81-3-3818-3247.

Co-conveners: T. Lewis (Canada), C.J. Marone (USA), S. McNutt (USA), M. Takeo (Japan).

S JS2 Physical And Chemical Evolution Of The Earth (IASPEI, IAVCEI).

Lead convener: T.J. Ahrens, Seismological Laboratory 252-21, California Institute of Technology, Pasadena, CA 91125 (USA); tel. 1-818-356-6906; fax 1-818-564-0715 (568 0935); telex 675425 Caltech PSD; e-mail: tja@seismo.gps.caltech.edu.

Co-conveners: P. Gillet (France), W. McDonough (Australia), E. Ohtani (Japan).

S JS3 Long-Term Seafloor Observations And Networks (IASPEI, IAG, IASPSO, ION).

Lead convener: K. Suyehiro, Ocean Research Institute, University of Tokyo, 1-15-1 Minamidai, Nakano-ku. Tokyo 164 (Japan); tel. 81-3-5351-6439; fax 81-3-5351-6438; e-mail: suyehiro@trout.ori.u-tokyo.ac.jp.

Co-conveners: J-P. Montagner (France), J. Orcutt (USA), A. Chave (USA), A. Schultz (UK), F. Spiess (USA).

S JS4 Patterns In Earth's Structure And Dynamics: Observations, Earth Models, And

Laboratory Measurements (IASPEI, IAGA, IAG).

Lead convener: S. Constable, Institute of Geophysics and Planetary Physics, Scripps Institute of Oceanography, La Jolla, CA 92093-0225 (USA); tel. 1-619-534-2409; fax 1-619-534-8090; e-mail: sconstable@ucsd.edu.

Co-conveners: A.G. Duba (USA), I. Jackson (Australia), J-P. Poirier, (France), T.A. Herring (USA).

S JS5 Structure, Evolution And Dynamics Of The Core-Mantle Boundary Region (IASPEI, IAGA, IAG, SEDI).

Lead convener: R. Jeanloz, Department of Geology and Geophysics, University of California, Berkeley, CA 94720 (USA); e-mail: jeanloz@uclink.berkeley.edu; tel. 1-415-642-3993; fax 1-415-643-9980; telex 9103667114.

Co-conveners: B. Buffett (Canada), K. Whaler (UK).

S JS6 Rock And Soil Properties Related To Environmental Concerns (IASPEI, IAHS, SEG).

Lead convener: G.A. Sobolev, Institute of Physics of the Earth, Russian Academy of Sciences, Molodezhnaya 3, Moscow 117 296 (Russia); tel. 7-095-930-0546; fax 7-095-930-5509; e-mail: sgc@adonis.ias.msk.su; telex 411478 SGC SU.

Co-conveners: S. Ingebritsen (USA), G. Olhoeft (USA), H. Spetzler (USA).

S JS7 Mantle Dynamics And The Geological Record (IASPEI, SEDI, ILP).

Lead convener: M. Richards, Department of Geology and Geophysics, University of California, Berkeley, Berkeley, CA 94720 (USA); tel. 1-206-543-6674; fax 1-206-543-0489; e-mail: mark@markr-ucb.berkeley.edu.

Co-conveners: S. Cloetingh (Netherlands), G. Davies (Australia), M. Gurnis (USA).

S JS8 Modelling The Earth's Interior (IASPEI, IAVCEI, IAG, SEDI).

Lead convener: R. O'Connell, Department of Earth and Planetary Sciences, Harvard University, 20 Oxford Street, Cambridge, MA 02138 (USA); tel. 1-617-495-2532; e-mail: oconnell@geophysics.harvard.edu; fax 1-617-495-8839.

Co-conveners: G. Masters (USA), M. Brown (USA), V. Dehant (Belgium).

V JS1 Mid-Tertiary To Recent Geodynamic Evolution Of The Andean Region (IAVCEI, IASPEI, IGCP, ILP).

Lead convener: Suzanne Kay, Department of Geological Sciences, Cornell University, Ithaca, NY 14853 (USA), tel. 607-255-4701; e-mail: kay@geology.cornell.edu; fax 607-254-4780.

Co-conveners: Bryan Isacks (USA), Paul Silver (USA).

V JS2 Subduction Zone Processes At 25-200 Kilometers Depth: The Subducting Slab, Mantle Wedge, And The Slab-Mantle Interface (IAVCEI, IASPEI, ILP).

Lead convener; Simon M. Peacock, Dept. Geology, Arizona State University, Tempe, AZ 85287-1404 (USA), tel. 602-965-1733; fax 602-965-8102; e-mail: peacock@asu.edu.

Co-conveners: Gray E. Bebout (USA), Craig Manning (USA).

V JS4 Geochemical And Geophysical Signatures Of Mantle Plumes (IAVCEI, IASPEI, IAG, SEDI).

Lead convener:: W.M. White, Department of Geological Science, Cornell University, Ithaca, NY 14853 (USA), tel. 607-255-7466; fax 607-254-4780; e-mail: white@geology.cornell.edu.

Co-conveners: L. Fleitout (IASPEI), B. Hager (USA), L. Kellogg (USA).

Inter-Association Workshops

S JW1 Geophysical Networks: Possibilities For And Problems With Co-Location Of Instruments (IASPEI, IAGA, IAG).

Lead convener: D.W. Simpson, Incorporated Research Institute for Seismology, 1616 N. Fort Myer Drive, Suite 1050, Arlington, VA 22209 (USA); tel. 1-703-524-6222; fax 1-703-527-7256; telex 7400457 IRIS UC; e-mail: simpson@iris.edu.

Co-conveners: G. Beulter (Switzerland), G. Boedecker (Germany), D. Kerridge (UK), G. Roullet (France).

S JW2 Geophysical Data Challenges In The 21st Century (IASPEI, IAG, IAGA, CODATA, WDC).

Lead convener: M.A. Chinnery, National Geophysical Data Center, National Oceanic and Atmospheric Administration, 325 Broadway, Boulder, CO 80303 (USA); tel. 1-303-497-6215; e-mail: mchinnery@ngdc.noaa.gov; fax 1-303-497-6513; telex 592811 NOAA MASC BDR.

Co-conveners: G.A. Sobolev (Russia), C.C. Tscherning (Denmark).

V JW1 Electromagnetic Effects Of Earthquakes And Volcanoes (IAVCEI, IASPEI).

Lead convener:: Malcolm Johnston, USGS, MS 977, 345 Middlefield Rd, Menlo Park, CA 94025 (USA); tel. 415-329-4812; fax 415-329-5163; e-mail: mal@thebeach.wr.usgs.gov.

Co-conveners: M. Gokhberg (Russia), M. Parrot (France), Y. Fujinawa (Japan).

Association Symposia

S 1 Seismicity Induced By Petroleum, Mining And Geothermal Activities (IASPEI, SEG).

Lead convener; M. Fehler, Los Alamos National Laboratory, Los Alamos, NM 87545 (USA); tel. 1-505-667-1925; fax 1-505-667-8487; e-mail: fehler@seismo5.lanl.gov.

Co-convener: C. Trifu (Canada).

S 2 Earthquake Prediction.

Lead convener: K. Hamada, National Research Institute for Earth Science and Disaster Prevention, Tennodai 3-1, Tsukuba-shi 305 (Japan); tel. 81-298-51-1611; fax 81-298-51-5658 (1622); e-mail: hamada@bosai.go.jp.

Co-convener: A. Lindh (USA).

S 3 Continental Evolution Revealed In Geophysical Transects (IASPEI, ILP).

Lead convener: W.D. Mooney, U.S. Geological Survey, Mail Stop 977, 345 Middlefield Road, Menlo Park, CA 94025 (USA); tel. 1-415-329-4764; fax 1-415-329-5163; e-mail: mooney@andreas.wr.usgs.gov.

Co-conveners: R. Clowes (Canada), H-J. Goetze (Germany), S. Mueller (Switzerland), N. Pavlenkova (Russia).

S 4 Origin And Evolution Of Sedimentary Basins: Tectonothermal, Geochemical And Hydrological Aspects (IASPEI, ILP, SEG).

Lead convener: R. Allis, Institute of Geological and Nuclear Sciences, P.O; Box 30368, Lower Hutt (New Zealand); tel. 64-4-569-9059; e-mail: ALLISR%LH-GNS.Lincoln.cri.nz; fax 64-4-569-5016.

Co-conveners: C. Beaumont (Canada), C. Clauser (Germany), S. Cloetingh (The Netherlands).

S 5 Ground Motion Analysis From Recent Strong-Motion Data.

Lead convener: Li-li Xie, Institute of Engineering Mechanics, State Seismological Bureau, 9 Xuefu Road, Harbin 150080

(China); tel. 86-451-66- 64756 (61304); fax 86-451-66-64755.

Co-convener: N.A. Abrahamson (USA).

S 6 Quantification Of Earthquakes.

Lead convener: G. Ekstrom, Department of Geological Sciences, Harvard University, Hoffman Laboratory, 20 Oxford Street, Cambridge, MA 02138 (USA); tel. 1-617-496-8276; fax 1-617-495-8839; e-mail: ekstrom@geophysics.harvard.edu.

Co-conveners: H. Kawakatsu (Japan), S.A. Sipkin (USA).

S 7 Rheology And Lithospheric Deformation (IASPEI, ILP).

Lead convener: S. Karato, Department of Geology and Geophysics, University of Minnesota, 310 Pillsbury Drive SE, Minneapolis, MN 55455 (USA); tel. 1-612-624-7553; fax 1-612-625-3819; e-mail: karato@maroon.tc.umn.edu.

Co-conveners: J. Braun (Australia), S. Sobolev (Russia).

S 8 Microearthquakes And Tectonics Of The Ocean Bottom.

Lead convener: H. Shimamura, Laboratory for Ocean Bottom Seismology, Hokkaido University, N-10 W-8, Sapporo 060 (Japan); tel. 81-11- 726-4766; fax 81-11-726-7240; e-mail: shima@geophys.hokudai.ac.jp; telex 932510 hokusc j.

Co-conveners: A. Ostrovsky (Russia), R.B. Whitmarsh (UK).

S 9 Earthquake Hazard Related To Regional And Local Geological Structures (IASPEI, ILP).

Lead convener: V. Schenk (IASPEI), Geophysical Institute, Academy of Sciences of Czech Republic, Bocni II, c.p. 1401, 141 31 Praha 4 - Sporilof (Czech Republic), tel. 42-2-6710-3111; fax 42-2-762-279 or 761-549; telex 121546 IONP C; e-mail: vs@ig.cas.cz.

Co-conveners: R.C. Agrawal (India), D. Giardini (Italy), A. Shapira (Israel).

S 10 Seismology And Physics Of Anisotropic Heterogeneous Media (IASPEI, SEG).

Lead convener: J-M. Kendall, Geophysics Section, Department of Physics, University of Toronto, Toronto, Ontario M5S 1A7 (Canada); tel. 1-416- 978-3159; fax 1-416-978-7606; e-mail: kendall@scylla.physics.utoronto.ca.

Co-conveners: E.M. Chesnokov (Russia), G. Pratt (UK).

S 11 Real Time Tectonics.

Convener: W.E. Holt, Department of Earth and Space Sciences, SUNY Stony Brook, Stony Brook, NY 11794-2100 (USA); e-mail: wholt@seism1.ess.sunysb.edu; tel. 1-516-632-8216; fax 1- 516-632-8240.

S 12 Geophysical Tomography In Complicated Heterogeneous Media (IASPEI, SEG).

Lead convener: E. Kissling, Institut fuer Geophysik, ETH-Hoenggerberg, CH-8093 Zurich (Switzerland); tel. 41-1-377-2623; fax 41-1-633-1065; telex 823480 eheb ch; e-mail: kiss@tomo.ifg.ethz.ch.

Co-conveners: L. Lines (Canada), A. Morelli (Italy).

S 13 Application Of Artificial Intelligence Computing In Geophysics (IASPEI, SEG).

Lead convener: G.B. Patnaik, Advanced Computing Technologies, P.O. Box 927477, San Diego, CA 92192-7477 (USA); tel. 1-619-535-4840; fax 1-619- 535-4890; e-mail: gpatnaik@pinet.aip.org.

Co-convener: F. Aminzadeh (USA).

S 14 Advances In Methods And Interpretation Of 2D And 3D Earth Structure - Case Studies, Computational Techniques, Structures (IASPEI, SEG).

Lead convener: C. Thomson, Department of Geological Sciences, Queen's University, Kingston, Ontario K7L 3N6 (Canada); tel. 1-613-545-6178 (2597); fax 1-613-545-6592; e-mail: ThomsonC@qucdn.queensu.ca.

Co-conveners: D. Miller (USA), M. Weber (Germany).

S 15 Dynamics Of The Subduction Process.

Lead convener: R. Wortel, University of Utrecht, Institute of Earth Sciences, Vening Meinez Lab, Budapestlaan 4, Utrecht 3584 CD (Netherlands); tel. 31-30-535086; e-mail: wortel@geof.ruu.nl.

Co-conveners: R.D. van der Hilst (Australia), Y. Fukao (Japan).

Association Workshops

S W1 Seismological Networks For The Next Century.

Lead convener: A. Tarantola, Institut de Physique du Globe, 4 place Jussieu, F-75252 Paris Cedex 05 (France); tel. 33-1-4427-3898; e-mail: tarant@ccr.jussieu.fr; fax 33-1-4427-4894.

Co-convener: R. Phinney (USA).

S W2 Thermoelastic Properties Of Deep Mantle Phases (IASPEI, SEDI).

Lead convener: O.L. Anderson, Institute of Geophysics and Planetary Physics, 405 Hilgard Avenue, University of California, LA, Los Angeles, CA 90024-1567 (USA); tel. 1-310-285-2386; fax: 1-310-206-3051.

Co-convener: I. Jackson (Australia).

S W3 Acquisition And Processing Of Deep Crustal Seismic Data (IASPEI, SEG).

Lead convener: S. Smithson, Department of Geology, University of Wyoming, Laramie, WY 82070 (USA); tel. 1-307-766-5280; e-mail: smithson@moho.uwyo.edu; fax 1-307-766-6679.

Co-conveners: P. Docherty (UK), P. Hubral (Germany).

S W4 Reliability Of Earthquake Precursors And Prediction.

Convener: M. Wyss, Geophysical Institute, University of Alaska, Fairbanks, AK 99775-0800 (USA); tel. 1-907-474-5529; fax 1-907-474-7290; e-mail: max@gaia.gi.alaska.edu.

S W5 Recent Devastating Earthquakes.

Convener: H. Kanamori, Seismological Laboratory, California Institute of Technology, Pasadena, CA 91125 (USA); tel. 1-818-395-6914; fax 1-818-564-0715; e-mail: hiroo@seismo.gps.caltech.edu.

S W6 Earthquake Warning Systems: Progress And Results.

Lead convener: W.H.K. Lee, U.S. Geological Survey, Mail Stop 977, 345 Middlefield Road, Menlo Park, CA 94025 (USA); tel. 1-415-329-4781; e-mail: lee@andreas.wr.usgs.gov; fax 1-415-329-5163.

Co-conveners: J.M. Espinosa-Aranda (Mexico), Y. Nakamura (Japan), T.C. Shin (Taiwan).

S W7 Intra-Continental Earthquakes.

Lead convener: Chen Yun-tai, Institute of Geophysics, State Seismological Bureau, 5 Minzuxueyuan Nanlu, Haidian District, Beijing 100081 (China); tel. 86-1-841-5370; fax 86-1-841-5372; telex 221032 IGSSB CN.

Co-convener: J.W. Dewey (USA).

S W8 Seismological Data And Practice Into The 21st Century.

Lead convener: E.A. Bergman, U.S. Geological Survey, P.O. Box 25046, Mail Stop 967, Denver Federal Center, Denver, CO 80225 (USA); tel. 1-303-273-8421; fax 1-303-

273-8450; telex 510 6014123 ESL UD; e-mail: bergman@gldfs.cr.usgs.gov.

Co-convener: D. Giardini (Italy).

S W9 Methodology Of Seismic Risk Assessment.

Lead convener: Chen Yong, State Seismological Bureau, No. 63, Fuxing Avenue, Beijing 100036 (China); tel. 86-1-821-5973; fax 86-1-821-5973; telex 716 222351; e-mail:

CHENYONG@BEPC2.IHEP.AC.CN.

Co-convener: A. Shapira (Israel).

S W10 Exploiting Large Volumes Of Digital Waveform Data - Theory And Applications.

Lead convener: R. Snieder, Department of Theoretical Geophysics, University of Utrecht, Budapestlaan 4, P.O. Box 80.021, 3508 TA Utrecht (Netherlands); tel.-31-30-535087 (575086); fax 31-30-535030; e-mail: snieder@geof.ruu.nl.

Co-conveners: J.C. VanDecar (USA), H. Benz (USA).

S W11 Deja Q: Anelasticity In The Earth's Deep Interior (IASPEI, SEDI).

Lead convener; M. Ritzwoller, Department of Physics, University of Colorado, Campus Box 390, Boulder, CO 80309-0390 (USA); tel. 1-303-492-7075; fax 1-303-492-7935; e-mail: ritzwoller@lemond.colorado.edu.

Co-convener: B. Romanowicz (USA).

S W12 GSHAP Related Advancement In Techniques And Interpretation In Seismic Hazard Assessment (IASPEI, ILP).

Convener: P. Basham, Geophysics Division, Geological Survey of Canada, 1 Observatory Crescent, Ottawa, Ontario K1A 0Y3 (Canada); tel. 1-613-995-0904; fax 1-613-992-8836; telex 389 0533117 EMAR OTT; e-mail: BASHAM@SEISMO.EMR.CA.

S W13 Improving Regional Cooperation In Observational Seismology.

Lead convener: J. Havskov, Institute of Solid Earth Physics, University of Bergen, Allegaten 41, N-5007 Bergen (Norway); tel. 47-5-213414; fax 47-5-320009; telex 856 42877 UBBRB N; e-mail: havskov@solid-earth-physics.uib.no.

Co-convener: F. Guendel (Costa Rica).

S W14 Seismic Noise - Stability And Change In Time And Space.

Lead convener: A.A. Ostrovsky, Laboratory of Seismic Researches, P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences,

Krasikova 23, Moscow 117 218 (Russia); tel. 7-095-124-5996; fax 7-095-230-2043; telex 411968 OKEAN SU.

Co-conveners: E. Hjortenberg (Denmark), P. Bormann (Germany).

S W15 Statistical Characteristics Of Earth Heterogeneity (IASPEI, SEG).

Lead convener: O. Gudmundsson, Research School of Earth Sciences, Institute of Advanced Studies, The Australian National University, Canberra, ACT 0200 (Australia); fax 61-6-257-2737; e-mail: oli@rse.anu.edu.au.

Co-conveners: A. Levander (USA), Wu Ruzhan (China).

Association Events

S B1 Opening Plenary

S L1 Association Lecture

"The Underdetermined Earth"

Lecturer: B.L.N. Kennett

S L2 Association Lecture

"Geoid And Geodynamics;
Certainties and Controversies"

Lecturer: C. Froidevaux

S D Association Barbecue

S B2 Closing Plenary

Proceedings of the International Conference on Continental Collision Zone Earthquakes and Seismic Hazard Reduction

On the occasion of the 5th Anniversary of the Spitak earthquake, an International Conference on *Continental Collision Zone Earthquakes and Seismic Hazard Reduction* was held at Yerevan-Sevan, Armenia, 1-6 October 1993. The discussions held at this IDNDR conference centered on three main topics: (1) Regional tectonics and seismicity; (2) Earthquake risk analysis and social aspects; and (3) Strong motion seismology. There were 101 papers presented at the conference and 10 discussion papers read during primary sessions. A number of key papers were offered and selected for inclusion in the published *Proceedings*, edited by Profs. B.A. Bolt and R. Amirbekian. A limited number of copies of this 258 -page publication are available free of charge from the Secretary-General.

Publication Transfer

IASPEI, and its Committee for Developing Countries, is deeply aware that in many countries of the developing world there is a lack of even basic texts and publications on seismology and related earth sciences.

IASPEI therefore wishes to set up a mechanism to help the transfer of books and publications from individuals and institutions that have surplus stocks to institutions in developing areas that have need of them. To prevent duplication, the IASPEI Secretariat is prepared to act as a clearing house for such offers and requests.

OFFERS Those with surplus publications, including back runs of journals, are invited to supply a list to the IASPEI Secretariat.

REQUESTS Institutions in developing countries with specific needs are invited to make these known to the IASPEI Secretariat.

The Secretariat will endeavor to co-ordinate offers and requests, and advise donors of suitable recipients. Publications should be shipped directly from donor to recipient; requests for payment or reimbursement of reasonable shipping costs should also be made to IASPEI.

Offers and requests, and requests for further information should be addressed to the Secretary-General.

American Geophysical Union Library Discount Program

The American Geophysical Union (AGU) has a "Special Discount Program for New Library Subscriptions for Emerging and Developing Countries." The purpose of the program is to provide a mechanism for institutions in countries with severe currency problems or very poor economic conditions to begin subscribing to AGU journals through a graduated discount program that will lead to full payment of the subscription rate over a period of 7 to 10 years. This program will start new subscriptions and is intended to build a loyal following from the institutions that participate. The decreasing discount schedule, which is listed below in yearly percentages of the subscription rate *plus postage*, helps to assure that the libraries do not become overly dependent on outside gifts. The program permits a foundation or a group of individuals to initiate subscriptions for worthy libraries. The prescribed discount would be based on the particular journal selected.

Year 1-3	20-30%
Year 4	40%
Year 5	50%
Year 6	60%
Year 7	70%
Year 8	80%
Year 9	90%
Year 10	100%

To be eligible for this special discount program the institution must meet the following criteria: (1) the institution did not subscribe during the previous 5 years; (2) the institution must have an open library that can be used by researchers and students; and (3) the institutions must agree to make the journal freely available to researchers and students on a regular basis. Once a library enters into this program, they are eligible to continue to obtain special discounts even if there is no sponsor.

To be sure that AGU can continue to recognize these libraries in their program, it is useful and important for them to have the names of the receiving libraries to avoid duplication. The institution must be recommended by an AGU member in that

country. The total number of such subscriptions to be added each year will be recommended by AGU staff and approved by the AGU General Secretary.

If there are any third world countries that could benefit from this program, please contact Tenna Randall, International Activities Coordinator, AGU (E-mail: randall@kosmos.agu.org, Fax: 1 202 328 0566).

Vit Karnik

Dr. Vit Karnik, an active member of IASPEI for many years, died on January 31, 1994.

Over a 40-year span, Dr. Karnik published a wide range of scientific and lay literature on disaster-related problems. These have given the public and scientists an important insight into the general problem of risk reduction, one of the corner-stones of disaster mitigation. He also lectured widely and internationally on earthquake disaster mitigation. His reputation was second to none in this field.

Dr. Karnik was selected as the 1993 laureate for the Sasakawa-DHA Disaster Prevention Award in recognition of his distinguished contribution to disaster prevention and preparedness, especially as regards earthquakes. Dr. Karnik was an important innovator, making highly technical or scientific issues accessible to disaster managers and administrators, thus improving the overall quality of disaster reduction. Dr. Karnik was one of the authors of the MSK Intensity Scale, which has become probably one of the most effective earthquake risk management tools known to us today. Furthermore, Dr. Karnik directed two important earthquake risk assessment and reduction projects in the Balkan region, and supervised the risk mitigation section of a third. In recent years, he was the chief scientific advisor for the Mediterranean Seismic Risk Reduction program, to which he contributed many fresh ideas, notably on the economic implications of risk assessment. Dr. Karnik was deeply involved in some of the United Nations' most significant pioneering activities in disaster reduction, and contributed significantly to the integrated risk management concept.

Sergei Leonidovich Solov'ev

With deep regret we convey to you the obituary on the death of Academician of the Russian Academy of Sciences (RAS) Sergei Leonidovich Solov'ev, Dr. of Sci. and Professor, who suddenly died on March 9, 1994. He was a well-known seismologist and specialist on tsunamis, an active participant in international cooperation, a member of the Russian National Geophysical Committee of IUGG, the former Chairman of the IUGG Tsunami Commission, and for many years the Head of the Geophysics Department at the Institute of Oceanology (IOAN) of RAS in Moscow. He was a prolific and perseverant researcher in the fields of assessment of earthquake energy, the magnitude scale, and the generation of tsunamis. While on the post of the Director of the Sakhalin Complex Research Institute, S.L. Solov'ev paid particular attention to the operative warning service for the population of impending tsunamis. His fundamental catalog of tsunamis in the Pacific Ocean, now used as a reference for the world scientific community, was published by the National Geophysical Committee. After his return to Moscow, S.L. Solov'ev was Chairman of the Seismological Council, Senior Scientist at IOAN, RAS, and the author of original remote (autonomous) systems for registration of seismic processes on the sea and ocean bottom.

He was the recipient of many international prizes, a member of editorial boards of several journals in this country and abroad.

His decease is deeply mourned by his family and colleagues.

G.A. Sobolev, President, National Geophysical Committee, Russian Academy of Science

Mikhail A. Sadovsky

Academician Mikhail A. Sadovsky, the outstanding Russian scientist, passed away on October 12, 1994.

His name is known world-wide to the scientific community because of his fundamental work in the areas of Physics of Explosion and in Geophysics. Academician Sadovsky was a member of a number of foreign academies of science. He had been

honored with international awards and has received the highest award from the Russian Academy of Sciences - the Gold Lomonosov's Medal. Academician Sadovsky was one of the main creators of the Soviet "nuclear shield".

Throughout his entire life, Academician Sadovsky worked not only as a scientist, but also as a preeminent organizer of the sciences. he had been leading the Institute of the Physics of the Earth, Soviet Academy of Sciences, as a director, for almost thirty years. he was the head of the Soviet-Russian Academy of Sciences; Deputy Director of the Institute of the Chemical Physics, Russian Academy of Sciences.

He was a great educator and leader. His intellectual, spiritual and stalwart personality, together with his broad scientific knowledge, allowed him to train and educate a great number of students. Many of these students later became well known scientists themselves and continued in Academician Sadovsky's footsteps, not only in Russia, but throughout the world.

Family, friends, colleagues, students, all who knew him, shall always keep the bright memory of this amazing person in their hearts.

Nadia Sena

PUBLICATIONS

Doornbos, D.J. (Editor), *Seismological Algorithms*, Academic Press, London, U.K., 469 pp, 1988.

Lee, W.H.K. (Editor), *IASPEI Software Library*, Seismological Society of America, El Cerrito, CA, U.S.A., v. 1-5, 1989-1993.

Kulhánek, O., *Anatomy of Seismograms*, Elsevier Science Publishers, The Netherlands, 188 pp., 1990.

Kennett, B.L.N. (Compiler and Editor), *IASPEI 1991 Seismological Tables*, Bibliotech, Canberra, Australia, 167 pp., 1991.

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.

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.

Cermak, V. (Editor), Special Issue, *Forward and Inverse Problems in Geothermal Modelling*, Proceedings of the IASPEI Symposium held during the 25th General Assembly in Istanbul, Turkey, *Tectonophysics*, v. 194, 1991.

Scholz, C.H., and Mikumo, T. (Editors), Special Issue, *Modelling the Earthquake Source*, Proceedings of the IASPEI Symposium held during the 25th General Assembly in Istanbul, Turkey, *Tectonophysics*, v. 197, 1991.

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

Shimamura, H. (Editor), Special section, *Structure and Processes of Active Margins*, Proceedings of the IASPEI Symposium held during the 25th General Assembly in Istanbul, Turkey, *Tectonophysics*, v. 201, 1992.

Iwan, W.D. (Editor), *The Effects of Surface Geology on Seismic Motion*, Proceedings of the IASPEI/IAEE International Symposium held in Odawara, Japan, Association for

Earthquake Disaster Prevention, Tokyo, Japan, v. 1, 355 pp., v.2, 517 pp., 1992.

Hurtig, E., and Haack, H. (Editors), *Geothermal Atlas of Europe*, Rudolf Muller International Booksellers, Amsterdam, The Netherlands, 36 maps, 156 pp., 1992.

Ebinger, C.J., Gupta, H.K., and Nyambok, I.O. (Editors), Special Issue, *Seismology and Related Sciences in Africa*, selected papers from the IASPEI Regional Seismological Assembly held in Nairobi, Kenya, August 1992, *Tectonophysics*, v. 209, 1992.

Ohnaka, M. (Editor), Special Issue, *Earthquake Source Physics and Earthquake Precursors*, Proceedings of the IASPEI sponsored Symposium held in Tokyo, Japan, November, 1990, *Tectonophysics*, v. 211, 1992.

Poirier, J.-P., and Ahrens, T.J. (Editors), Special Issue, *Physical Properties of the Earth's Interior: Mantle to Core*, Proceedings of the IASPEI Symposium held during the 26th General Assembly in Vienna, Austria, *Physics of the Earth and Planetary Interiors*, v. 74, 1992.

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.

Lewis, T. (Editor), Special Issue, *Climatic Change Inferred from Underground Temperatures*, *Paleogeography, Paleoclimatology, Paleocology*, v. 98, *Global and Planetary Change*, v.6, 1992.

Ranalli, G. (Editor), Special section, *Heat Flow, Rock Mechanics, and Seismicity*, Proceedings of the IASPEI Symposium held during the 26th General Assembly in Vienna, Austria, *Tectonophysics*, v. 217, 1993.

Duda, S.J., and Yanovskaya, T.B. (Editors), Special section, *Estimation of Earthquake Size*, Proceedings of the IASPEI Symposium held during the 26th General Assembly in Vienna, Austria, *Tectonophysics*, v. 217, 1993.

Sowerbutts, W.T.C., and Plesinger, A. (Editors), Special Issue, *Analysis and Interpretation of Digital Seismograms*, Proceedings of the IASPEI Workshop held during the 26th General Assembly in Vienna,

Austria, Computers & Geosciences, v. 19, 1993.

Green, A.G., Kröner, A., Götze, H.-J., and Pavlenkova, N. (Editors), Special Issue, Plate Tectonic Signatures in the Continental Lithosphere, Proceedings of the IASPEI Symposium held during the 26th General Assembly in Vienna, Austria, Tectonophysics, v. 219, 1993.

Parrot, M., and Johnston, M.J.S. (Editors), Special Issue, Seismo-Electromagnetic Effects, Proceedings of the IAGA/IASPEI Symposium held during the 26th General Assembly in Vienna, Austria, Physics of the Earth and Planetary Interiors, v. 77, 1993.

McGuire, R.K. (Editor), IDNDR Monograph, The Practice of Earthquake Hazard Assessment, IASPEI/European Seismological Commission, 284 pp., 1993

Bolt, B.A. and Amirbekian, R. (Editors), Proceedings of the International Conference on Continental Collision Zone Earthquakes and Seismic Hazard Reduction held at Yerevan-Sevan, Armenia, 1-6 October 1993, 258 pp., 1994.

FORTHCOMING MEETINGS

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

1994 November 7-18
SECOND WORKSHOP ON THREE-DIMENSIONAL MODELLING OF SEISMIC WAVES GENERATION, PROPAGATION AND THEIR INVERSION
Trieste, ITALY
International Centre for Theoretical Physics, P.O. Box 586, I-34100, Trieste, ITALY
(Tel: 39 40 22401; Fax: 39 40 224163; Telex: 460392 ICTP I)

1994 November 14-25
SECOND REGIONAL GEODESY AND GEOPHYSICS ASSEMBLY IN AFRICA, Ibadan, NIGERIA
LOC of ICESA Scientific Assembly, ICESA International Secretariat, P.O Box 22383, University of Ibadan Post Office, Ibadan, NIGERIA

1995 January 11-13
INTERNATIONAL WORKSHOP ON MULTIDISCIPLINARY OBSERVATORIES

ON THE DEEP SEAFLOOR
Marseille, FRANCE
Martine Cheminee, Secretariat ODP France, B118, Universite Pierre et Marie Curie, 4, Place Jussieu, 75252 Paris Cedex 05, FRANCE (Tel: 33 1 44 27 51 55; Fax: 33 1 44 27 38 93; E-mail: odpfr@ccr.jussieu.fr)

1995 January 23-February 2
NATO ADVANCED STUDY INSTITUTE (ASI): MONITORING A COMPREHENSIVE TEST BAN TREATY
Alvor, Algarve, PORTUGAL
E.S. Husebye, Bergen University (Fax: 47 55 320009; E-mail:husebye@ifjf.uib.no) or A.M. Dainty, Phillips Lab/GPE (USAF) (Fax: 1 617 377 2702; E-mail: dainty@doc.plh.af.mil)

1995 March 7-11
CONFERENCE ON STRESS AND STRESS RELEASE IN THE LITHOSPHERE
Karlsruhe, GERMANY
Joachim Ritter, SFB 108, Geophysikalisches Institut, Universität Karlsruhe, Hertzstrasse 16, D-76178 Karlsruhe, GERMANY (Fax: 49 0 721 71173; E-mail: ritter@gpiwap3.physik.uni-karlsruhe.de)

1995 April 3-7
XX GENERAL ASSEMBLY OF THE EUROPEAN GEOPHYSICAL SOCIETY, Hamburg, GERMANY
EGS Office, Postfach 49, Max-Planck-Str. 1, 37189 Katlenburg-Lindau, GERMANY (Tel: 49-5556-1440; Fax: 49-5556-4709; E-mail: egs@linax1.dnet.gwdg.de)

1995 May 15-17
SECOND INTERNATIONAL CONFERENCE ON SEISMOLOGY AND EARTHQUAKE ENGINEERING
Tehran, IRAN
SEE-2 Organizing Committee, P.O. Box 19395/3913, Tehran, IRAN (Tel: 98 21 801 4038; Fax: 98 21 258 8732; Telex: 213419 DIFIR; E-mail: IIEESIC@ATTMAIL.COM)

1995 May 22-27
WORKSHOP ON SEISMIC WAVES IN LATERALLY INHOMOGENEOUS MEDIA
Castle of Trest, CZECH REPUBLIC
Ivan Psencik, Geophysical Institute, Czech Academy of Science, Bocni II/1401, 141 31 Praha 4 - Sporilov, CZECH REPUBLIC (Tel: 42 2 67 103 111; Fax: 42 2 761 549; E-mail: ip@ig.cas.cz)

1995 July 2-14
21ST GENERAL ASSEMBLY, IUGG,

28TH GENERAL ASSEMBLY, IASPEI
Boulder, Colorado, U.S.A.
IUGG XXI General Assembly, c/o American
Geophysical Union, 2000 Florida Ave., NW,
Washington, DC 20009, U.S.A.

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