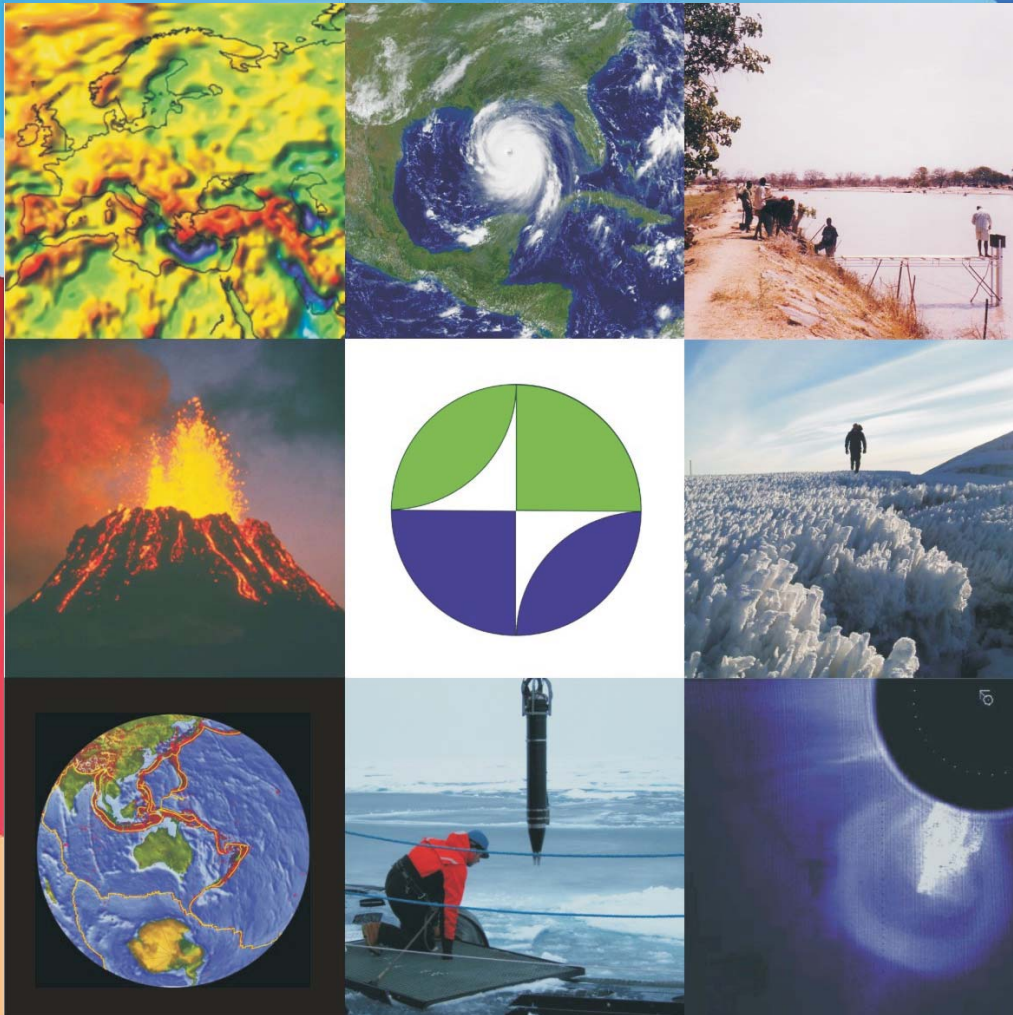




International Union of Geodesy and Geophysics (IUGG)
Union Géodésique et Géophysique Internationale (UGGI)

ANNUAL REPORT 2009





**INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS
UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE**

IUGG Annual Report 2009

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Alik Ismail-Zadeh**

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IUGG Annual Report 2009

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INTRODUCTION

Established in 1919, the International Union of Geodesy and Geophysics (IUGG) is the international, non-governmental, non-profit organization dedicated to advancing, promoting, and communicating knowledge of the Earth system, its space environment, and the dynamical processes causing change. Through its constituent associations, commissions, and services, IUGG convenes international assemblies and workshops, undertakes research, assembles observations, gains insights, coordinates activities, liaises with other scientific bodies, plays an advocacy role, contributes to education, and works to expand capabilities and participation worldwide. Data, information, and knowledge gained are made openly available for the benefit of society – to provide the information necessary for the discovery and responsible use of natural resources, sustainable management of the environment, reducing the impact of natural hazards, and to satisfy our need to understand the Earth's natural environment and the consequences of human activities. IUGG Associations and Union Commissions encourage scientific investigation of Earth science and especially interdisciplinary aspects. Each Association establishes working groups and commissions that can be accessed by using the links on our website.

IUGG is one of the large scientific unions adhering to the International Council for Science (ICSU). ICSU provides a global forum for scientists to exchange ideas and information and to develop standard methods and procedures for all fields of research. IUGG brings expertise on Earth studies from researchers in its International and Inter-Association Commissions. As a member of ICSU, IUGG strongly supports its policy of non-discrimination by affirming the rights and freedom of scientists throughout the world to engage in international scientific activity without limitation by such factors as citizenship, religion, creed, political stance, ethnic origin, race, color, language, age or gender.

IUGG has initiated and/or vigorously supported collaborative efforts that have led to highly productive worldwide interdisciplinary research programs, such as the International Geophysical Year (1957-58), the Upper Mantle Project (1964-70), the International Hydrological Decade (1965-74), the Geodynamics Project (1972-79), the Global Atmospheric Research Programme (1967-80), the International Lithosphere Programme, the World Climate Research Programme, the International Decade for Natural Disaster Reduction, Integrated Research on Risk Disasters, the International Heliophysical Year (2007-2009), the Electronic Geophysical Year (2007-2008), the International Year of Planet Earth (2007-2009), and the International Polar Year (2007-2008). These programs have set a model for international, interdisciplinary cooperation. Representing all geophysical disciplines, IUGG is involved in the projects and programs related to climate change, global warming, and related environmental impacts.

IUGG supported and supports initiatives by ICSU, especially those in which Earth sciences have a role to play. One major contribution was the creation, some 50 years ago, through ICSU, of the World Data Centers (WDC) and the Federation of Astronomical and Geophysical Data Analysis Services (FAGS). These organizations are being transformed to the ICSU World Data System, from which the data gathered during the major programs and data products will be available to researchers everywhere. IUGG cooperates with UNESCO in the study of natural catastrophes, hydrological and oceanographic research. IUGG also places particular emphasis on the scientific problems of economically less-developed countries by sponsoring activities relevant to their scientific needs (e.g. Geosciences in Africa, Water Resources, Health and Well-Being, etc.)

The web site, available in English and French, can be found at <http://www.IUGG.org>.

GENERAL INFORMATION

MEMBERSHIP

By their very nature, geodetic and geophysical studies require a high degree of international co-operation. IUGG is critically dependent on the scientific and financial support of its member Adhering Bodies. The list of present and past IUGG Adhering Bodies is published in the IUGG Yearbook and posted on the web site. Each Adhering Body establishes a National Committee for IUGG, and names Correspondents to each Association (as appropriate). During 2009, the Union had 65 Member Adhering Bodies. Several members were in observer status because they were in arrears of dues payment. Four Adhering Bodies were in Associate Member status. New member country applications are being actively encouraged.

STRUCTURE

Responsibility for directing the Union's affairs is vested in the IUGG Council by the Statutes and Bylaws. The IUGG Council consists of the Council Delegates, who are designated by the Adhering Body of their respective countries as their representatives for each Council meeting. The Council is convened at each quadrennial General Assembly. A Bureau, an Executive Committee and a Finance Committee administer IUGG affairs between Council meetings. The Executive Committee has the particular responsibility of overseeing the scientific programs of the Union. There is no permanent Secretariat; the National Committee of the country where the IUGG Secretariat is located is expected to provide administrative support for Union affairs.

Associations

The Union brings together eight semi-autonomous Associations, each responsible for a specific range of topics or themes within the overall scope of the Union's activities and each with a sub-structure. The Associations convene their own assemblies and sponsor scientific symposia, often in partnership with one another. Within its own discipline, each Association is responsible for determining its own program of investigations and for supporting the activities of its own component parts. All Earth scientists, worldwide, are eligible to participate in IUGG and Association assemblies, workshops, and symposia, although only scientists from member countries with dues paid may serve as officers.

The eight International Associations are listed below, and short reports on their 2009 activities are included here. Additional information about each Association is given on their web sites, which can be accessed from the IUGG web site.

- International Association of Cryospheric Sciences (IACS)
- International Association of Geodesy (IAG)
- International Association of Geomagnetism and Aeronomy (IAGA)
- International Association of Hydrological Sciences (IAHS)
- International Association of Meteorology and Atmospheric Sciences (IAMAS)
- International Association for the Physical Sciences of the Oceans (IAPSO)
- International Association of Seismology and Physics of the Earth's Interior (IASPEI)
- International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)

Union Commissions

Owing to the interactive nature of the subject fields addressed by the Union's Associations, a number of Union Commissions have been established that promote the study of particular interdisciplinary problems. In 2009, the following bodies were active:

- Commission for Data and Information (UCDI)
- Commission on Geophysical Risk and Sustainability (GRC)
- Commission on Mathematical Geophysics (CMG)
- Commission on the Study of the Earth's Deep Interior (SEDI)

Inter-Unions Commission

The International Lithosphere Program, guided by the Scientific Committee on the Lithosphere (SCL), was established in 1980 as the Inter-Unions Commission on the Lithosphere (ICL) by the International Council for Science (ICSU) at the request of IUGG and the International Union of Geological Sciences (IUGS). The name was formally changed to the Scientific Committee on the Lithosphere in 1999. According to Decision 8.4 from the 2005 ICSU General Assembly, ICSU decided "to withdraw ICSU sponsorship from SCL/ILP and to recommend that responsibility would then shift to IUGG and IUGS." Since that time, IUGG and IUGS have reaffirmed the ILP mission and have collaborated to redefine ILP as an Inter-Unions body.

GENERAL ASSEMBLIES OF THE UNION

General Assemblies have been held since 1922 and, since 1963, at 4-year intervals. These assemblies provide an extraordinary opportunity for Earth scientists from around the world to gather and share expertise, research data, and results. Past IUGG General Assemblies are listed in the IUGG Yearbook and on the web site. The most recent General Assembly was held in Perugia, Italy, 2-13 July 2007. The next General Assembly will be held in Melbourne, Australia, 27 June – 8 July 2011.

OTHER SCIENTIFIC MEETINGS

Each Association organizes its own scientific assembly in the 4-year interval between Union General Assemblies in order to report scientific progress and conduct Association business. Associations sometimes meet jointly with the purpose of promoting interdisciplinary science. Topical and regional symposia and workshops are organized on other occasions by the Associations to provide opportunities for geodesists and geophysicists worldwide to discuss their respective methodologies, results, and hypotheses, and to plan collaborative research projects. The symposia, often held in less-visited, geophysically interesting locales, are intended to be attractive to the younger scientists from the developing countries of the world. In 2009, the Scientific Assemblies of seven IUGG Associations were held in Africa, Asia, Europe, North and South America: the IASPEI Assembly in Cape Town (South Africa), the MOCA-09 Joint Assembly of IACS, IAMAS, and IAPSO in Montreal (Canada), the IAGA Assembly in Sopron (Hungary), the IAG Assembly in Buenos Aires (Argentina), and the IAHS Assembly in Hyderabad (India).

PUBLICATIONS

The IUGG publishes an annual Yearbook that lists the organizational structure and officers of each body within the Union. The Yearbook is posted on the IUGG web site: <http://www.iugg.org/publications/yearbooks/yearbook2010.pdf>. The Union also distributes an electronic newsletter (the IUGG E-Journal) monthly to Adhering Bodies and National Committees. Each Association manages its own publications.

IUGG OFFICERS FOR 2007-2011

IUGG Bureau

President: Tom Beer (Australia)
Secretary General: Alik Ismail-Zadeh (Germany/Russia)
Vice-President: Harsh Gupta (India)
Treasurer: Aksel Hansen (Denmark)
Members: Yun-Tai Chen (China)
David Jackson (USA)
Ali Tealeb (Egypt)

IUGG Executive Committee

IUGG Bureau members

Immediate Past President: Uri Shamir (Israel)
IACS President: Ian Allison (Australia)
IAG President: Michael Sideris (Canada)
IAGA President: Eigil Friis-Christensen (Denmark)
IAHS President: Gordon Young (Canada)
IAMAS President: Guoxiong Wu (China)
IAPSO President: Lawrence Mysak (Canada)
IASPEI President: Zhongliang Wu (China)
IAVCEI President: Setsuya Nakada (Japan)

IUGG Finance Committee

Chair: Juan Vilas (Argentina)
Members: David Collins (UK)
Jan Krynski (Poland)
Kiyoshi Suyehiro (Japan)

Association Presidents and Secretaries General

International Association of Cryospheric Sciences

President: Ian Allison (Australia)
Secretary General: Manfred Lange (Germany/Cyprus)

International Association of Geodesy

President: Michael Sideris (Canada)
Secretary General: Hermann Drewes (Germany)

International Association of Geomagnetism and Aeronomy

President: Eigil Friis-Christensen (Denmark)
Secretary General: Mioara Manda (France)

International Association of Hydrological Sciences

President: Gordon Young (Canada)
Secretary General: Pierre Hubert (France)

International Association of Meteorology and Atmospheric Sciences

President: Guoxiong Wu (China)
Secretary General: Hans Volkert (Germany)

International Association for the Physical Sciences of the Oceans

President: Lawrence Mysak (Canada)
Secretary General: Johan Rodhe (Sweden)

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

President: Zhongliang Wu (China)
Secretary General: Peter Suhadolc (Italy)

International Association of Volcanology and Chemistry of the Earth's Interior

President: Setsuya Nakada (Japan)
Secretary General: Joan Martí (Spain)

Union Commission Officers

Union Commission for Data and Information (UCDI)

Chair: Peter Fox (USA)
Secretary: Adelina Geyer Traver (Spain)

Union Commission on Geophysical Risk and Sustainability (GRC)

Chair: Kuniyoshi Takeuchi (Japan)
Secretary: Gerd Tetzlaff (Germany)

Union Commission on Mathematical Geophysics (CMG)

Chair: Dan Rothman (USA)
Secretary: Claudia Pasquero (USA)

Union Commission on Studies of Earth's Deep Interior (SEDI)

Chair: Gauthier Hulot (France)
Secretary: Michael Bergman (USA)

Inter-Unions Commission: International Lithosphere Program (ILP)

President: Sierd Cloetingh (The Netherlands)
Secretary General: Roland Oberhänsli (Germany)

IUGG BUREAU AND EXECUTIVE COMMITTEE MEETINGS

The IUGG Bureau and Executive Committee (EC) meetings were held in Melbourne, Australia; the Bureau meeting took place on 8-9 October 2009 and the EC meeting on 9-11 October 2009. The Scientific Program Committee for the 2011 IUGG General Assembly met on 12 October 2009. The next IUGG Bureau meeting will be held in Cairo, Egypt, from 30 October to 2 November 2010.

MESSAGE FROM THE PRESIDENT



The year 2009 marks the 90th anniversary of IUGG, which was established by nine founding member countries (Australia, Belgium, Canada, France, Italy, Japan, Portugal, the United Kingdom, and the United States of America) on 28 July 1919.

There have been 24 General Assemblies during that period. The first was held in Rome in 1922, the most recent in Perugia in 2007, and the next one in Melbourne in 2011. The year half-way between the IUGG General Assemblies is the year in which most of the Scientific Associations that comprise the IUGG host their Scientific Assemblies. Details of these scientific assemblies can be found in the reports of the various Associations.

Though I was not able to attend the IASPEI Scientific Assembly in Cape Town, or the IAHS Scientific Assembly in Hyderabad, I managed to attend all of the others. At the IAGA Scientific Assembly held in Sopron, Hungary, a large number of English speaking high school students had been drafted to assist the visitors. Such young people are the future of our discipline, and I am pleased to see that self-organized groupings of young scientists are beginning to emerge. The Association of Polar Early Career Scientists has set up a web site (<http://apecs.arcticportal.org/>) to publicize their many activities. The Young Earth Scientists (YES, <http://www.networkyes.org/>) held a conference in Beijing in October 2009. Such groupings are to be applauded and encouraged.

The IUGG Executive at their committee meeting held in Melbourne agreed to set up three committees – Capacity Building and Education, Membership Issues, and Honours and Recognition – to work out, amongst other things, how to encourage young scientists.

One of the great pleasures of attending scientific assemblies is being able to meet key people from national Adhering Bodies and IUGG National Committees. Their hard work and endeavours provide the strength of the Union. The Union provides them with the framework for international linkages and contacts. I was therefore delighted when the AGU formally acknowledged two of our IUGG officers with well-deserved recognition. In December 2008, IUGG Vice-President Harsh Gupta was awarded the AGU Waldo Smith Medal (and elected an AGU Fellow), and in May 2009, IUGG Secretary General Alik Ismail-Zadeh received the AGU International Award.

As a result of the 12 January 2010 earthquake in Haiti, the Bureau of IUGG agreed to update the IUGG Resolution on natural hazards and disasters. The IUGG Resolution, based on the Statement of the IUGG Commission on Geophysical Risk and Sustainability (www.iugg-georisk.org/Statement_NatHaz2010.pdf) and IUGG Resolution 8 “Reduction of Risk from Natural Hazards” adopted in Perugia in 2007 (<http://www.iugg.org/resolutions/perugia07.pdf>), is posted on the IUGG web site at <http://www.iugg.org/resolutions/nathaz2010.pdf> and can also be found on the web page of the International Council for Science at: http://www.icsu.org/Gestion/img/ICSU_DOC_DOWNLOAD/3014_DD_FILE_IUGG_NatHazResolution.pdf

Tom Beer

MESSAGE FROM THE SECRETARY GENERAL



The year 2009 was exciting in the life of the Union. Major activities and events included the following:

- Scientific Assemblies held around the world: the IASPEI Assembly in Cape Town (South Africa), the MOCA-09 Joint Assembly of IACS, IAMAS, and IAPSO in Montreal (Canada), the IAGA Assembly in Sopron (Hungary), the IAG Assembly in Buenos Aires (Argentina), and the IAHS Assembly in Hyderabad (India);
- the IUGG Bureau and Executive Committee met in Melbourne, Australia, on 8-11 October;
- the Science Program Committee of the XXV IUGG General Assembly met twice, in May (Munich, Germany) and in October (Melbourne, Australia), to discuss the scientific program of the General Assembly to be held in Melbourne, 27 June to 8 July 2011;
- new Union Committees (Capacity Building and Education, Honours and Recognition, Membership Issues, and Visioning) were set up to increase IUGG visibility worldwide;
- IUGG strengthened further its relationship with ICSU GeoUnions via cooperation in programmes on natural hazards and health & well-being;
- Georgia joined IUGG as an associate member; Bulgaria became a regular member of the Union; and India enhanced its membership category from 5 to 6.

The IUGG Secretariat thanks the Union Associations and Commissions as well as individuals who helped making the year 2009 exciting and productive in strengthening international geophysical science for the benefit of society.

The IUGG Secretariat is located on the campus of the University of Karlsruhe, Germany. As a response to the request of the German National Committee for Geodesy and Geophysics (NKGG), the German Research Foundation (DFG) awarded the IUGG Secretariat a grant to hire an Assistant Secretary General and to assist with business travels of the Secretary General for the years 2010-2011. The IUGG is very grateful to the NKGG for the support and to the DFG for the sponsorship of the IUGG Secretariat. Also, IUGG is thankful to Ms. Simone Oswald for her work as Assistant Secretary General.

The report below highlights the activities of the Union, Union Associations and Commissions, and the International Lithosphere Programme (Inter-Unions Commission) for 2009.

Alik Ismail-Zadeh

IUGG ACTIVITIES

THE IUGG EXECUTIVE COMMITTEE MEETING

The IUGG Executive Committee (EC) met in Melbourne on 9-11 October. The IUGG EC is comprised of the IUGG Bureau, which met on 8-9 October, the immediate Past President and the Presidents of the 8 Union Associations. The Association Secretaries General and the Chair of the IUGG Finance Committee were invited to attend the meeting. Representatives of the International Union of Geological Sciences (IUGS) and the International Union of Radio Sciences (URSI) attended the EC meeting as guests of the IUGG President. The IUGG President and the Presidents of the Union Associations reported on the activities after the last EC meeting (Karlsruhe, Germany, August 2008). The IUGG Vice-President reported on the activities of the Union Commissions on Mathematical Geophysics (CMG), on Geophysical Risk and Sustainability (GeoRisk), on the Study of the Earth's Deep Interior (SEDI), and on Data and Information (UCDI), and the EC approved the Terms of Reference for each of the Commissions. The IUGG Secretary General reported on the activity of the IUGG Secretariat, IUGG membership, the interaction with the Secretariat of the International Council for Sciences (ICSU) and its committees. The IUGG Treasurer reported on the financial situation of the Union. Other topics on the agenda included (i) the preparation for the 2011 IUGG General Assembly (Ray Cas, Chair of the Local Organizing Committee, reported on the activity of the Committee); (ii) appointments to the Statutes / By-Laws Committee, the Nominating Committee for the 2011 Election, and the Site Comparison Committee for the 2015 General Assembly, (iii) the International Lithosphere Program (ILP) and an ad-hoc joint IUGG-IUGS review committee; (iv) GeoUnions activities; (v) the results of the International Year of Planet Earth (IYPE), the International Polar Year (IPY), the Electronic Geophysical Year (eGY), and the International Heliophysical Year (IHY); (vi) reports of the IUGG liaisons to ICSU committees and to other international bodies; (vii) the cooperation with the Preparatory Commission for the Comprehensive Nuclear-Test Ban Treaty Organization (CTBTO) and the World Bank Institute; (viii) the relationship with national and regional geophysical unions and societies. The IUGG Executive Committee established four new Union Committees: (i) Visioning, (ii) Capacity Building and Education, (iii) Honors and Recognitions, and (iv) Membership Issues.



*IAMAS wishing a Happy 90th Birthday to IUGG. From left to right: Guoxiong Wu, IAMAS President; Aksel Hansen, IUGG Treasurer; Tom Beer, IUGG President; Harsh Gupta, IUGG Vice-President, Hans Volkert, IAMAS Secretary General, and Alik Ismail-Zadeh, IUGG Secretary General
(Melbourne, Australia, 10 October 2009)*

On 8 October, prior to the EC meeting, the IUGG Executive Committee members and Association Secretaries General met the members of the Local Organizing Committee for the 2011 IUGG General Assembly and visited the venue of the future Assembly.

On 11-12 October, the IUGG Finance Committee met in Melbourne to discuss the IUGG financial report for 2007 and 2008, to review the IUGG accounts for 2008, and to overview administrative matters and

representative travel expenses, IUGG grants, allocations, and inter-association activities. The IUGG Treasurer and the Secretary General were invited to attend the meeting.

MEMBERSHIP

The Democratic Republic of Congo, Ghana and Morocco had been Associate members of IUGG for many years. The Royal Society of London (UK) supports African membership of ICSU Scientific Unions through the payment of their annual membership fees. In 2009, D.R. Congo and Ghana applied to the Royal Society to fund their membership, and their applications were successful. D.R. Congo and Ghana became regular members of Category 1.

The Bulgarian Academy of Sciences, the IUGG Adhering Body for Bulgaria, became a member in 1930 but had since been in Associate status. In 2009, Dimitar Jordanov, President of the Bulgarian National Committee for IUGG, requested a change of status from Associate to Regular Member in Category 1. The IUGG Executive Committee accepted the request. IUGG is pleased to welcome Bulgaria as a new voting member of IUGG; scientists from Bulgaria will be eligible to hold office in IUGG and all of our Associations.

The Indian National Science Academy, the Adhering Organization to IUGG, informed IUGG President Tom Beer that the Academy decided to enhance its Category of membership in the Union from V to VI starting from 2009.

In 2009, Georgia was accepted as a new member of IUGG in Associate status. The Adhering Body is the Georgian Geophysical Association.

New member country applications are being actively encouraged. The IUGG Secretariat continued communications with Azerbaijan, Burkina Faso, Macedonia, and the United Arab Emirates regarding the adhesion to IUGG.

PUBLICATIONS

- The 2009 Yearbook was published electronically in January and listed the organizational structure and officers of each body within the Union. It was published together with the 2008 Annual report and sent to all Adhering Bodies, other relevant organizations, and libraries in May 2009 (<http://www.iugg.org/publications/yearbooks/yearbook2009.pdf>).
- The IUGG web site, in English and French, is being updated.
- The E-Journal, an informal newsletter, was published monthly keeping IUGG Member National Committees informed about the activities of the IUGG Associations, and actions of the IUGG Secretariat (<http://www.iugg.org/publications/ejournals/>).
- The IUGG brochure is electronically available on the IUGG web page (www.iugg.org/about/brochure.pdf). The bilingual brochure contains information on the objectives, activities, research topics, and structure of IUGG and introduces the eight Union Associations and their activities. Hard copies of the brochure were mailed to the Adhering Organizations and National Committees in May 2009.

IUGG SUPPORT FOR WORKSHOPS AND SYMPOSIA

Each year, IUGG co-sponsors symposia and meetings appropriate to our disciplines of study. US\$20,000 is allocated annually to assist meetings, especially to support the attendance of young scientists and scientists from developing countries. In 2009, IUGG selected the following research meetings to be held in 2010 for support:

- Ice and Climate Change: A View from the South. VICC-2010, Valdivia, Chile, 1-3 February.
- V Congreso Agrimensura, Havana, Cuba, 2-5 March.
- SCOR/IAPSO WG 133 OceanScope meeting, London, UK, 12-14 April.

- VIII international workshop "Physics of forecasting of rock destruction", Zelenogorsk Town, Russia, 24-28 May.
- BALWOIS 2010, Ohrid, Republic of Macedonia, 25-29 May.
- International summer school/workshop in glaciology, McCarthy, Alaska, USA, 7-15 June.
- "Breaking Seismo-ill-Logical Circulus Vitiosus" at ESOF2010, Torino, Italy, 2-7 July.
- CACGP / IGAC Joint Conference "Atmospheric Chemistry: Challenging the future", Halifax, Canada, 11-16 July.
- Workshop on Antarctic Clouds at the Byrd Polar Research Center, Columbus, Ohio, USA, 15-16 July.
- 38th COSPAR Scientific Assembly, Bremen, Germany, 18-25 July.
- Cryospheric Changes and Influences - Cryospheric Issues in Regional Sustainable Development, Lijiang, China, 12-14 August.
- Managing Waveform Data and Related Metadata for Seismic Networks", Foz do Iguaçu, Brazil, 13-19 August.
- 20th Electromagnetic Induction Workshop, Porto Sokhna, Egypt, 18-24 September.
- Dynamics of calderas: collapse and unrest, Réunion, 3-9 October.
- 6th World FRIEND Conference, Fez, Morocco, 25-29 October.
- PAIGH, SIRGAS & IAG-SIRGAS joint meeting, Lima, Peru, November.
- 8th ASC General Assembly, Hanoi, Vietnam, 8-10 November.

IUGG LIAISON REPORTS

SCOPE

The 13th General Assembly of the Scientific Committee on Problems of the Environment (SCOPE) met on 9-11 June 2009 at the Royal Society in London, United Kingdom. The business meeting was followed by a scientific symposium at Imperial College on "Finance, food and energy crises: consequences for the environment and land use change". The business meeting discussions primarily focused on the future directions of SCOPE to address the severing of formal ties with ICSU in October 2010. Members of SCOPE presented fundamentally new directions that are aligned with the rapidly changing needs of global science and the use of science in decision- and policy-making. Important results of the meeting, which are in line with a draft strategic plan, are:

- SCOPE will develop and implement an interdisciplinary science agenda of high relevance to decision makers. SCOPE will continue to undertake its credible and authoritative assessments and users syntheses that address the priorities of specific regions while maintaining global relevance. Founded on partnerships, SCOPE will develop a range of products and services with and for its users.
- SCOPE remains open to historical partners, the academic, scientific and research institutions, scientific academies, research councils, or associations of such institutions, and international scientific unions. Potential new members will have a demonstrated interest in bringing the best science to bear on environmental stewardship.
- SCOPE will seek out and encourage active membership from businesses and associations and federations of business and industry, civil society organizations, and governmental and intergovernmental organizations.
- Membership in SCOPE offers opportunities with reciprocal rights and responsibilities. *Each Member has one vote and pays an annual subscription fee* that is used for operational core funding and seed funds towards project development.
- SCOPE will continue to undertake individual projects and serial collaborations with non-member organizations; the new approach will enhance and widen the spectrum of partnerships.
- SCOPE's finances in recent years have been beset by a host of problems that collectively have gravely imperiled its reactive capacities. The newly elected Executive Committee will give high priority to seeking alternative funding.

- The Paris Secretariat of SCOPE will require new premises as of October 2010, when formal ties are severed with ICSU. All aspects of this re-location will be explored by the Secretariat and the Executive Committee, taking into account the several overtures from possible host organizations in Paris and outside France.
- The SCOPE constitution now requires review and revision. The new constitution will be submitted to SCOPE Members by the end of 2009.

New officers: President: Paul Risser (USA); 1st Vice-President: Lu Yonglong; 2nd Vice-President: Holm Tiessen, Treasurer: Ahmed M. Hassan (Egypt); Secretary General: Mary C. Scholes (South Africa); Members: Magdy Mahamed Attia (Egypt), Chang-Hung Chou (China-The Academy in Taipei), Carlos Alfredo Joly (Brazil), Annelies Pierrot-Bults (The Netherlands, SCOR), Jon Samseth (Norway, IUPAP)

Norman (Jake) Peters, IUGG liaison to SCOPE

United Nations Office of Cartography

The Ninth United Nations Regional Cartographic Conference for the Americas is organized every four years by the United Nations Statistics Division – UNSD. The ninth edition was held in New York from August 10 to 14, 2009 in accordance with Economic and Social Council decision 2005/231 of July 20, 2005. The conference was attended by 81 representatives of 27 countries and 16 specialized agencies and international scientific organizations. Dr. Fortes participated in the conference representing Brazil and the International Union of Geodesy and Geophysics – IUGG. At its first plenary meeting, on August 10, 2009, the conference elected by acclamation Dr. Fortes as the Conference President.

The primary objective of the Conference was to provide a regional forum where governmental officials, planners, scientists and experts from the Americas and other regions could meet to report on the efforts being accomplished in the development and implementation of national and regional spatial data infrastructures in the Americas and other parts of the world, and to address the common needs, problems and experiences in the field of surveying and mapping, cartography, remote sensing, geographic information systems, including capacity building and training aspects, scientific and technological requirements, implementation issues and benefits. Additional specific objectives were to report on the assessment of the status of the resolutions adopted by the Eight United Nations Regional Cartographic Conference for the Americas, held in 2005; and on the recent advances and contributions of geographical information in support of sustainable development.

To accomplish its objectives, the Conference established three technical committees to discuss specific issues and to propose resolutions to be discussed/voted/adopted in the plenary meeting held in the last day of the Conference. The three technical committees (and their chairmen) were Committee I: Strategy, policy, economic and institutional issues and spatial data infrastructures and their development in the Americas, (Jesus Olvera, Mexico); Committee II: Geospatial data collection, management and dissemination (Fraser Taylor, Canada); and Committee III: Best practices and applications (Tatiana Delgado Fernandez, Cuba).

During the final plenary meeting of the Conference, nine resolutions were approved, whose final text will be available soon at the Conference website (see link below). Seven out of those nine resolutions will be implemented under the responsibility of the Permanent Committee on Spatial Data Infrastructure for the Americas – PC-IDEA during the next four years. It must be mentioned that PC-IDEA members met during the Conference and elected Dr. Fortes as the Permanent Committee President for the 2009-2013 term. The Conference documents (agenda, papers and presentations submitted to the Conference, list of participants, etc.) are available at the Conference website: <http://unstats.un.org/unsd/METHODS/CARTOG/unrcca.htm>.

Luiz Fortes, IUGG liaison to the U.N. Office of Cartography

WCRP

The 30th Joint Science Committee (JSC-30) Meeting of the World Climate Research Program (WCRP) was held at the Earth System Science Interdisciplinary Center (ESSIC), University of Maryland, College Park, MD, USA, 6-9 April 2009. The newly elected President of the JSC A. J. Busalacchi presided at the whole JSC Meeting. The agenda of the meeting included WCRP accomplishments in 2008; WCRP review; risk assessment/management from the perspective of users of climate information; WCRP intermediate and long-term planning; legacy and new science issues; WCRP post 2013 and some others. In addition to the agenda, three round-table sessions were organized. The first round-table session brought together WCRP sponsors (WMO, ICSU, IOC, and funding agencies). The second session involved WCRP Partners (IGBP, IHDP, DIVERSITAS, ESSP, START, GCOS) and was held after the core projects and working groups had presented their intermediate-term plans, the path to 2013 and beyond, legacy and new science issues. The third session discussed WCRP of the future, including emerging climate science and societal needs; observations and analysis; processes and modeling; predictions, projections and applications interface. Finally, the JSC Executive Session formed the JSC 30 actions and recommendations.

Guoxiong Wu, IUGG liaison to WCRP

International Civil Aviation Organization (ICAO)

The fourth meeting of the International Airways Volcano Watch Operations Group held in Paris, France, from 15 to 19 September 2008 called for the International Civil Aviation Organization (ICAO) to express its recognition to IUGG and project partners for having completed the Eruption Source Parameters (ESP) Project and producing the on-line tools for use by the volcanic ash advisory centers. The Air Navigation Commission in considering the report of the meeting noted this conclusion and requested that such recognition be expressed on behalf of ICAO. Taieb Cherif, ICAO Secretary General, thanked IUGG and its project partners (the U.S. Geological Survey and the Cascades Volcano Observatory) for the completion of the ESP Project and for the production of the on-line tools to be used in volcanic ash and transport and dispersion models in support of safety and efficiency of international air navigation.

IUGG PRESIDENT ATTENDED UNION ASSOCIATION SCIENTIFIC ASSEMBLIES

IUGG President Tom Beer participated in the MOCA-09 Scientific Assembly, a joint scientific assembly of IACS, IAMAS, and IAPSO held in Montreal, Canada, 19- 29 July. Tom Beer attended the IACS Executive Committee meeting, two IAPSO Executive Committee meetings, and two IAMAS Executive Committee meetings. On 24 July, he also took the opportunity to present a scientific talk on the Natural Hazards Program of the International Year of Planet Earth (IYPE). The IUGG Presidential speech at the opening ceremony stressed the 90th birthday of IUGG, and reminded attendees that the next opportunity for the three associations to get together is in Melbourne in 2011. Tom Beer hosted an IUGG President's dinner at which two of the members of the professional conference organizers for the Melbourne 2011 General Assembly briefed the Presidents and Secretaries General of IACS, IAMAS and IAPSO on the status of our preparations.

IUGG President Tom Beer participated in the IAGA Scientific Assembly held in Sopron, Hungary, 22-30 August, and attended three meetings of the IAGA Executive, and two meetings of the Council of Delegates – making a speech at the first Executive meeting and at the first Delegates meeting. The Hungarian organizers of the assembly had tied the IAGA event to the International Year of Planet Earth (IYPE), and there was a large screen in the square outside the conference venue showing IYPE material. The organizers had also arranged a press conference with the IUGG President, the President of the Hungarian Academy of Science, the Presidents of the Hungarian National Committees for IUGG and IYPE, the President and Secretary General of IAGA, and a few others. The opening ceremony was held in the main town square, and in his Presidential speech, Tom Beer emphasized the importance of IAGA to IUGG, and his wish that all the attendees would be able to come to Melbourne in 2011 to attend the IUGG General Assembly.



IUGG President Tom Beer (right) and IAMAS President Guoxiong Wu in leisure mode during MOCA-09.



President Tom Beer (left) met Jozsef Palinkas, President of the Hungarian Academy of Science, and Jozsef Adam, President of the Hungarian National Committee for IUGG, during the IAGA Sc. Assembly.

IUGG President Tom Beer participated in the IAG Scientific Assembly held in Buenos Aires, Argentina, 31 August to 4 September. Tom Beer addressed the Scientific Assembly highlighting the importance of IAG for IUGG (the association was the first of the scientific associations to come into existence) and advertised the IUGG2011 Melbourne Assembly. On Tuesday, 1 September, Tom Beer paid a courtesy visit to Alberto Riccardi, President of the International Union of Geological Sciences. They discussed the ICSU leadership and the process underway to identify a new Global Geoscience Initiative for UNESCO.

PREPARATIONS FOR THE XXV IUGG GENERAL ASSEMBLY

Science Program Committee for 2011 IUGG General Assembly met in Munich

The Science Program Committee (SPC) is comprised of the Chair (Peter Manins), the IUGG Secretary General, 8 Association Secretaries General, and the IUGG President (ex-officio). On 20 May 2009, the Secretaries General (SsG) of IAG, IAGA, IAHS, IAMAS, IAPSO, IASPEI, and IUGG met in Munich to discuss several topics of common interest. Based on the suggestions by Peter Manins, the Chair of the Science Program Committee, and Tom Beer, IUGG President, they considered several principal points related to the Science Program of the General Assembly.

The IUGG General Assembly will run 12 days from 27 June to 8 July and its scientific part will run 10 days from 28 June to 7 July. Most of the Associations will have their scientific program expanded to 5-6 days and only IAMAS asks for ten days to run their sessions and inter-association symposia. Business meetings will be held during 26 June (part day), 27 June (full day) and 8 July (part to full day), and also each day from 28 June to 7 July after the termination of the scientific sessions for at least two hours (let's say from 18:00 to 20:00). The SsG suggested using Sunday, 3 July, as an ordinary working day (to give a possibility for Associations to run their sessions without breaks). Each Association nominates at least 2 outstanding scientists in their field as plenary speakers. The IUGG President will select 8 speakers from the list of nominees (adding one more speaker) to balance between geographical regions, gender, age, etc.

The regional (Australia and New Zealand) representatives of the IUGG Associations were very welcome to attend the SPC meeting on 12 October, to provide local knowledge and ideas to the Committee, and to assist the Association Secretaries General in setting up the Scientific Program of the General Assembly.

Science Program Committee for 2011 IUGG General Assembly met in Melbourne

The Committee met in Melbourne on 12 October together with the Australian and New Zealand representatives to the SPC, the Chair of the Local Organizing Committee for the 2011 IUGG General Assembly, and representatives of the Professional Organizers. The tentative draft of the science program was

discussed including topics of Union and Inter-Association symposia. The science program will be finalized by April 2010.

Nominations for the IUGG Bureau and Finance Committee for 2011-2015 are open

The IUGG Council, at its final meeting in Melbourne in 2011, will elect the IUGG Bureau Members for the coming quadrennium (2011-2015). These include the President, Vice- President, Treasurer, and 3 Members of the Bureau. Also the Council elects at the General Assembly four members of the Finance Committee. On 30 November 2009 IUGG President T. Beer announced the appointment of the members of the Nominating Committee for IUGG Bureau and Finance Committee Members for 2011-2015 as follows:

Chair: *Masaru Kono* (Japan)

Members: *Gerhard Beutler* (Switzerland), *Marta Calvache* (Colombia), *Vladimir Cermak* (Czech Republic), and *Corina Risso* (Argentina) as an alternate member to M. Calvache.

The Nominating Committee has the task of collecting the nominations and preparing the ballot, following the rules regarding nominations and elections for these positions (IUGG Statute 11 and By-Law 10).

CALL FOR INVITATIONS TO HOST THE 2015 IUGG GENERAL ASSEMBLY

Invitations to host the 2015 General Assembly are now being accepted and must be received by 27 December 2010 (six month before the next General Assembly, consistent with IUGG By-Law 6). The Guidelines for proposals are posted on the IUGG website [http://www.iugg.org/assemblies/Guidelines_IUGG_GAs.pdf] or can be received directly from the IUGG Secretariat [secretariat@iugg.org]. All invitations will be evaluated by an impartial committee appointed for that purpose, and a report will be given to the IUGG Council before their final vote. The IUGG Council, at their 2011 meeting in Melbourne, will make the final selection from the invitations that are received.

IUGG-SPONSORED SCIENTIFIC EVENTS

Spring School on Fluid Mechanics and Geophysics of Environmental Hazards

The Spring School on Fluid Mechanics and Geophysics of Environmental Hazards was held from 19 April to 2 May 2009 in the Institute for Mathematical Sciences, National University of Singapore, and focused on fluid mechanical aspects of natural hazards bringing students to current research frontiers in the fields. The School addresses the fundamentals of geophysical fluid dynamics and geophysical hazard and risk in atmosphere and ocean contexts. Four specific environmental hazards were to be discussed in depth, namely, typhoons and tropical cyclones; monsoons and flooding; tsunamis; and pollution of atmosphere, ocean and the urban environment. The longer-term objective was to initiate a network of young scientists in countries of Asia and the Pacific Region who would be committed to work in this interdisciplinary area, and to launch a program of research addressing these problems. The School director was Keith Moffatt (Professor Emeritus of the University of Cambridge, UK). Two IUGG scientist delivered lecturers at this School: Gerd Tetzlaff (Institute of Meteorology, Universität Leipzig, Germany) and A. Jayawardena (International Centre for Water Hazard and Risk Management, Japan).

The school program was enriched by advanced lectures addressing relevant topics in the field. Two of the lectures were open to the general public and as such announced in the university and the local press. These were the lectures by E. Shuckburgh “Climate Change: the Scientific Basis”, by Keith Moffat “Rattleback Reversals, a Prototype of Chiral Dynamics”, and by Harsh Gupta (Chair of the ROAP Program on Natural Hazards and IUGG Vice-President), who introduced the new ICSU ten-year research program “Integrated Research on Disaster Risk”.

The student projects were organized in three phases. A few weeks before the beginning of the spring school in the first phase the lecturers formulated and circulated projects together with some references. The organizers then nominated students for the projects, and the students had time to prepare themselves for the projects. The second phase began on the first day of the school itself and allotted a time of two hours for

“guided student projects” on four afternoons of the first week. In the second week each of the nine student groups presented their results in a half hourly plenary presentation in phase three. These results will be summarized in a short report and will be made available on the IMS homepage. The full program of the spring school can found on the IMS homepage (www.ims.nus.edu.sg, there under: Programs and Activities, Past Activities 2009)

The School was promoted by IUTAM (the International Union of Theoretical and Applied Mechanics) and IUGG, and supported by an ICSU grant. The School was supported also by the ICSU Regional Office for Asia and the Pacific Region (Kuala Lumpur, Malaysia), and it contributed to two of ICSU’s priority areas: Natural and Human-Induced Environmental Hazards and Disasters and Building Scientific Capacity. Kuniyoshi Takeuchi and Gerd Tetzlaff of the Union Commission on Geophysical Risk and Sustainability represented IUGG in the school’s international scientific committee.

International Seminar on Earthquake Prediction

The Second International Seminar on Earthquake Prediction was held in Lisbon, 29-30 April 2009, evocating the 100th anniversary of the Benavente (Lower Tagus) 1909 earthquake. The Seminar was organized in two days with 7 key-note lecturers and 30 oral presentations and a final Round Table discussion. The Seminar was opened by the President of the Academy of Engineering, Carlos Salema, and welcomed by the organizers L. A. Mendes-Victor and Carlos Sousa Oliveira. A letter from Badaoui Rouhban, the UNESCO Director of the Section for Disaster Reduction was presented to the participants of the seminar. This seminar was an excellent opportunity to bring together international research and development, to share the knowledge and the latest achievements and practices in Earthquake Prediction. The seminar provided a platform for meetings, discussions and exchange of views between specialists in earthquake forecasting; reviewed the state-of-the-art concerning the existing possibilities of predicting major seismic movements and their intensities; identified the most promising lines of research; and examined the improvement of international co-operation in the field of earthquake prediction. The program covered the following major topics: seismicity, electromagnetic studies, multi-parameter and geodetic case studies, and neotectonics and paleoseismology. The Seminar was supported by IUGG, the Portuguese Academy of Engineering, the European Centre on Urban Risks, the Fundação para a Ciência e a Tecnologia, and the Fundação Calouste Gulbenkian.

Clouds and Turbulence Workshop

The role of small-scale turbulence in cloud formation and precipitation is a controversial issue, which has long divided the cloud physics community. The difficulty in measuring clouds at these scales and the lack of realistic cloud models that span all the relevant scales means that its precise effect is hard to quantify and makes an assessment of its importance difficult. However, increasing computer power, more sophisticated laboratory experiments and better observations have all brought a resurgence of interest in this issue in recent years particularly from the turbulence community. The phenomenon of preferential concentration, or clustering, of droplets has perhaps received most attention from the turbulence community yet this is just one of many processes at work in clouds: large-scale atmospheric stability, aerosols and entrainment all play vital roles in the formation of clouds. For this reason, it was felt that a workshop, which aimed to bring together those in the cloud physics and turbulence communities was especially timely.

The workshop was held in the Institute of Mathematical Sciences, Imperial College of London, 23-25 May 2009. It started with four overview talks: on cloud microphysics, inertial particles in turbulence, cloud parameterizations and the interaction between clouds and radiation. The aim was to provide a sufficient background for those not conversant with that field. The rest of the three-day workshop was organized along four broad themes: the role of small-scale turbulence in the condensational growth of droplets, entrainment, turbulent enhancement of collision rates among larger droplets and how these phenomena affect (and are affected by) radiative heating. The workshop was supported by IUGG, EPSRC, NERC, NCAS, LMS, Grantham Institute for Climate Change (Imperial College), and the UK Met Office. The abstracts and presentations can be viewed at the web-page of the workshop: <http://www3.imperial.ac.uk/mathsinstitute/programmes/research/turbulence/4thturbulenceworkshop/programme>.

International Conference “Electronic Geophysical Year: State of the Art and Results”

The international conference “Electronic Geophysical Year: State of the Art and Results” was held from 3 to 6 June 2009 in Pereslavl-Zalessky, Russia. The conference was organized by the Russian Academy of Sciences and the National Committee for IUGG and was co-sponsored by IUGG, the Electronic Geophysical Year (eGY), the International Institute for Applied Systems Analysis (IIASA), and ICSU-CODATA. Reports on the results achieved during the eGY, the International Polar Year (IPY), the International Heliophysical Year (IHY), the International Year of Planet Earth (IYPE), and the International Year of Astronomy (IYA) were presented at the conference. Other conference topics were GIS and artificial intelligence methods in geoscience; problems of geoinformatics in seismology and geocology, GRID systems, the transition of World Data Centers and FAGS into the World Data System as well as geomagnetic observations, virtual observatories, global changes, climate and weather of the solar-terrestrial system. The scientific program of the Conference attracted a great deal of interest from the scientific community. About 150 attendees from Russia, Austria, Germany, USA, Iran, Slovakia, Ukraine and France held over 120 presentations at six scientific sessions.

Special attention was paid to the development and program realization of an integrated intellectual geoinformation environment for Earth sciences data; the integration of existing resources and the creation of new geoinformation resources on geosciences comprising an integrated GIS; the application of modern technologies of artificial intelligence to the analysis of vast quantities of time series of observations; and the development of databases and scientific knowledge. At the final session on 6 June 2009, the conference participants endorsed the “Tsukuba Declaration”, adopted at the “IGY+50” meeting in Tsukuba (Japan) on 13 November 2008 and aimed at enhancing cooperation between scientists of the world, national academies of science, governments and inter-governmental organizations fostering an exchange of scientific data expanding the sphere of knowledge related to geosciences.

More information on the Conference can be found at <http://elpub.wdcb.ru/ebooks/absegy.pdf>

International Scientific Studies Conference

The International Scientific Studies Conference, organized by CTBTO (Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization), was held in Vienna (Austria) from 10 to 12 June. Several officers of IUGG and IASPEI attended the Conference: H. Gupta (IUGG Vice-President), Alik Ismail-Zadeh (IUGG Secretary General), Z. Wu (IASPEI President), P. Suhadolc (IASPEI Secretary General), R. Engdahl (Past President of IASPEI), and K. Suyehiro (IUGG Finance Committee Member). The U.N. Secretary General Ban Ki-moon (by a video message) and the Austrian Federal Minister for European and International Affairs M. Spindelegger welcomed the participants of the Conference. Several panels were organized at the first day of the meeting: Atmospheric nuclear explosions (P. Suhadolc took part in the panel discussion), two panels on the underwater and underground nuclear explosions (K. Suyehiro as part of both panels), and some other panels. The second day was devoted to scientific keynote talks and poster presentations. D. Storchak (Director of the International Seismological Centre, affiliated to IASPEI) gave the key-note talk on the CTBTO contribution to the global earthquake data collection. Seismologist P. Richards (Columbia University, USA) talked on seismic monitoring for nuclear explosions. Other key-note talks were given on the topics of the CTBTO interest, e.g., hydroacoustics, data mining and data exploitation, infrasound technologies, atmospheric transport modeling. The topic of the last day was the dialogue for the future. The panel was comprised of five experts representing CTBTO (T. Toth, Executive Secretary), the Russian Academy of Sciences (E. Avrorin, expert in physics of nuclear explosions), U.S. National Academy of Sciences (R. Jeanloz, geophysicist), IUGG (H. Gupta, Vice-President), and the Royal Netherlands Meteorological Institute (H. Haak, Director). IUGG officers met T. Toth, Executive Secretary of CTBTO, and O. Dahlman, Chair of the International Scientific Studies Program, and discussed the possibilities for future cooperation between IUGG and CTBTO. Two topics were considered: (i) a joint IUGG-CTBTO Research Grants Program and (ii) a Union symposium at the XXV IUGG General Assembly in 2011.



Peter Suhadolc, IASPEI Secretary General



Kiyoshi Suyehiro, IUGG Finance Committee



Zhongliang Wu, IASPEI President



Harsh Gupta, IUGG Vice-President

IUGG and Associations officers at the International Scientific Studies Conference in Vienna

International Symposium on Earthquake Seismology and Earthquake Predictability

The International Symposium on Earthquake Seismology and Earthquake Predictability was held in Beijing, China, from 5 to 9 July 2009. Participants at the symposium came from 13 countries/regions including Australia, Canada, China, India, Japan, Mongolia, Russia, Switzerland, Thailand, UK, USA, and Vietnam. 66 papers were presented at the symposium (<http://www.cea-igp.ac.cn/English/Symposium/index.htm>). The symposium was supported by IUGG and co-sponsored by the Asian Seismological Commission of IASPEI, the Seismological Society of Japan, and the Southern California Earthquake Center. Several keynote-lectures were delivered at the symposium: (1) “Retrospection on seismicity pattern and its forecast result before Wenchuan earthquake” by Y. Zhang, China Earthquake Networks Center; (2) “An introduction to the special project ‘research on mid- and long-term forecast for potential M7 and greater earthquakes in mainland China’” by X. Wen, Earthquake Administration of Sichuan Province; (3) “Earthquake prediction: 20 years of global experiment” by V. Kossobokov, Russian Academy of Sciences in Moscow (Vice-President, IUGG Commission on Geophysical Risk and Sustainability); (4) “How far are we from numerical earthquake prediction?” by Y. Shi, Chinese Academy of Sciences in Beijing; (5) “Earthquake forecasting: data, physics, methods, validation, and applications” by J. Rundle, University of California at Davis; (6) “GEMS: a global earthquake monitoring system that could stress-forecast all damaging earthquakes worldwide” by S. Crampin, University of Edinburgh; (7) “Map of expected earthquakes for north-east China: 10 years after” by A. Zavyalov, Russian Academy of Sciences in Moscow (Chairman, IASPEI Commission on Earthquake Source – Modeling and Monitoring for Prediction), and (8) “Estimates of losses due to earthquakes” by M. Wyss (World Agency of Planetary Monitoring and Earthquake Risk Reduction). An Open Forum was organized, accommodating the debate on the future of the study on earthquake predictability and its application.

International Tsunami Symposium

The International Tsunami Symposia (ITS) are organized by the IUGG Inter-Association Tsunami Commission (TC) every two years (at IUGG General Assemblies and in-between them). The symposium traditionally brings together scientists and engineers specializing in the field of tsunami research to exchange information and to discuss progress in tsunami science. Since its creation in 1960 in Helsinki, Finland, at the XII IUGG General Assembly, the Tsunami Commission has sponsored 23 symposia. The 24th Tsunami Symposium was held on 14-16 July 2009 in Novosibirsk, Russia. The Symposium was sponsored by the International Union of Geodesy and Geophysics (IUGG), Russian Foundation for Basic Research (RFBR), Siberian Branch of the Russian Academy of Sciences (SB RS), and the World Agency for Planetary Monitoring and Earthquake Risk Reduction (WAPMERR). Host organization was the Institute of Computational Mathematics and Mathematical Geophysics (ICMMG), Siberian Branch, Russian Academy of Sciences. The Symposium was attended by 90 registered participants, 52 of them coming from abroad (Australia, Belorussia, Bulgaria, Germany, Greece, France, Indonesia, India, Italy, Japan, Mexico, New Zealand, Norway, Portugal, Turkey, and USA).

The scope of the 24th Tsunami Symposium covered all the basic aspects of the tsunami phenomenon, be it scientific, technical, social or historical. Basic themes discussed at the symposium were: (1) Historical tsunami observations, catalogs and databases; (2) Tsunami measurements and field observations; (3) Geologic effects and records of tsunamis; (4) Tsunami probability and seismotectonic aspects of tsunami generation; (5) Non-seismic sources of tsunami; (6) Tsunami modelling - generation, propagation and run-up; (7) Tsunami impacts on coastlines; (8) Tsunami forecasting and real-time warning; (9) Methods of long-term tsunami risk estimates (coastal tsunami zoning), and (10) Tsunami mitigation and countermeasures.



ITS-2009 participants at the entrance to the symposium venue

Since 1985, the IUGG Tsunami Commission has had a tradition of holding **joint technical workshops** as follow-up meetings to the research symposia and/or the sessions of the IOC/UNESCO International Coordination Groups for Tsunami Warning Systems. In Novosibirsk, the follow-up Technical Workshop was held on Friday, 17 July, and was devoted to consideration of the coastal and deep-water tsunami measurements and real-time detection. The workshop conveners were A. Rabinovich (IORAS, Moscow, Russia), P. Dunbar (NGDC/WDC-GMG, Boulder, CO) and V. Gusiakov (ICMMG SB RAS, Novosibirsk, Russia). The key questions discussed at the Workshop were the following: (i) deep-ocean (DART and cable) tsunami measurements: experience and prospects; (ii) Coastal tide gauge sea-level measurements: data availability and distribution; (iii) Application of deep-water and coastal sea-level measurements in operational Tsunami Warning Service; and (iv) Database format, data collection, analysis, sharing and exchange.

The *IUGG Tsunami Commission business meeting* was held on 14 July. Commission members that attended the meeting were: Abe, Bernard, Burnett (new member), Dunbar, Greenslade, Gusiakov, Kanoglu, Levin, Marchuck, Nishimura, Pelinovsky, Power, Rabinovich, Ranguelov (new member), Satake, Synolakis, Tinti, Titov, Tsuji, Yalciner, Yamamoto. The detailed report on the meeting can be found at TC's web-site (<http://www.ngdc.noaa.gov/hazard/jtc/tsunami2009BM.pdf>). At the meeting it was decided that the Proceedings of the Symposium will be published as a volume of selected papers in PAGHEOPH Proceedings Series. K.Satake, A.Rabinovich, U.Kanoglu and S. Tinti were selected as editors of the proceedings. Approximate schedule of publication is as follows: the title and authors must be submitted by August 31, 2009; paper submission deadline is November 30, 2009; the final manuscripts will be submitted to the publishers by the end of 2010; and the volume will be published before the 2011 IUGG General Assembly. The next, 25th Tsunami Symposium will be organized within the program of the XXV IUGG General Assembly in 2011 (Melbourne, Australia). P. Cummins, V. Titov, K. Satake, and G. Papadopolous will chair the Tsunami Session.

A number of social events were organized in association with the symposium and the follow-up workshop. They included the Ice-breaker Reception on Monday, 13 July, the Conference Dinner in the downtown restaurant "Skomorokhi" on Wednesday, 15 July, barbecue on the bank of the Ob River in the summer resort hotel "Bylina" on Friday, 17 July, and the field trip to the "Bystrovka" seismic test-site, located in 70 km SE of Akedemgorodok, on Saturday, 18 July. The symposium was well covered by mass media reports (TV, radio, newspapers). The official newspaper of the Siberian Division, Russian Academy of Sciences "Science in Siberia" published a detailed report of the meeting. Selected photos from the meetings and associated social events can be found at <http://tsun.sccc.ru/tsunami2009/photos.html>.

International Workshop "Geodynamical Phenomena"

The IUGG-sponsored Workshop "Geodynamical Phenomena: from Field, Observational, Computational, Seismological and Rheological Perspectives" was held in Suzdal (Russia) on 18-23 August 2009 and attracted about 70 participants including representatives from Australia, Belarus, China, Denmark, France, Germany, Israel, Japan, Norway, Sweden, Switzerland, Taiwan, Ukraine, and USA. Scientific topics of the workshop covered lithospheric and crustal dynamics, mantle convection, seismic wave propagation, core dynamics, theoretical and experimental mineral physics, field observations, planetary science and geological field constraints from faulting. Two publications have been planned for: one will consist of short papers to be submitted to *Physics of the Earth*, a Russian journal, and to be translated later into English by Springer. The second publication project will be concerned with longer articles: about 12 of them will appear in the Lecture Series in Earth Sciences with Springer.

An important outcome from this workshop at Suzdal was the very clear recognition by the Russian expatriate community in geophysics and other branches of geosciences that it is indeed possible to have a large international geophysical meeting in Russia and that this will provide an interesting opportunity for Russian scientists to engage their "overseas brothers" once again. As a consequence of the Suzdal conference, a recent organizing meeting was just held in Kiev, Ukraine, on 30 October 2009 in preparation for the second workshop, to be called "Geodynamical Phenomena: From Observations and Experiments to Theory and Experiments". And this meeting will be held next year in Kiev, Ukraine, 20-24 September 2010. Representatives from the USA, Russia and Ukraine participated in this planning session.

The website connected with the conference is <http://marina.geo.umn.edu/suzdal>, which includes the schedule of presentations, abstracts, and the list of participants. Over 100 photographs of the meeting including the contents of the talks and social events can be found on <http://marina.geo.umn.edu/suzdal/photos.html>.

Symposium "Geodesy in Latin America"

The IUGG-sponsored Symposium on "Geodesy in Latin America" was held at the IAG Scientific Assembly on 4 September 2009 in Buenos Aires, Argentina. It was divided in three oral and one poster sessions. A total of 25 talks and 16 posters were presented covering the following themes: geometric reference systems, analysis of the gravity field, and real time positioning. The session on geometric reference systems was

opened by the overview of the project “Sistema de Referencia Geocéntrico para las Américas” (SIRGAS). The SIRGAS Continuously Operating Network (SIRGAS-CON) includes presently 208 stations. Their data are analyzed by four Processing Centres in Argentina, Brazil, Colombia, and Germany. The weekly solutions of station coordinates are integrated in two Combination Centres in Germany and Brazil, and provided every week to the users. Several presentations discussed the practical use of the SIRGAS reference frame in the Latin American countries. According to the reports, 14 of 18 member countries have introduced this reference frame by law. The corresponding activities include densification of the SIRGAS station network, determination of transformation parameters from the old to the new geodetic datum, transformation of all geo-information from the old to the new reference system, transfer of the cartographic projections and coordinate systems to SIRGAS, and capacity building and outreach activities to promote the use of SIRGAS.

Detailed oral and poster presentations were given from Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Mexico, and Uruguay. The progress in the determination of a unified geoid model of South America was presented in two talks. A contribution of the US National Geospatial-Intelligence Agency (NGA), responsible for the global model EGM2008, demonstrated the status of gravity data in South America and the regions where observation campaigns are urgently needed in order to improve the density and precision of gravimetric information. The main regions are the Amazon jungle and the central Andes in Bolivia and Peru. The IAG Sub-commission on Gravity and Geoid in South America computed a new quasi-geoid model using 950,000 gravity data. In addition to the quasigeoid for South America, there were also presentations of local geoid models in Argentina and Venezuela. Several presentations dealt with real time positioning activities.

Priestley Workshop and Lecture

The 2009 Priestley Workshop was held on 13 October at the CSIRO Marine and Atmospheric Research Laboratory in Aspendale (Australia). The major topics of the workshop were the 90th anniversary of the International Union of Geodesy and Geophysics, launch of the 25th IUGG General Assembly in Melbourne (27 June – 8 July 2011) with the theme “Earth on the Edge: Science for a Sustainable Planet”, and reports on Australia’s involvement in the International Year of Planet Earth and International Polar Year in 2008. The workshop’s speakers were Ian Allison (IACS President), Tom Beer (IUGG President), Alik Ismail-Zadeh (IUGG Secretary General), Setsuya Nakada (IAVCEI President), and Steve Rintoul (Acting Chief of CSIRO Marine and Atmospheric Research).



*Speakers at the Priestley Lecture and Workshop.
From left Setsuya Nakada, Tom Beer, Lawrence Mysak,
Ian Allison, and Alik Ismail-Zadeh.*

The Priestley series of annual lectures began in 1995 to honor Bill Priestley (1915-1998), founding Chief of the former Atmospheric Division, and has continued following the formation of CSIRO Marine and Atmospheric Research. The 2009 Priestley Lecture was delivered by Lawrence Mysak (IAPSO President, and Professor of McGill University, Montreal, Canada) who is internationally known for his extensive applications of mathematics to physical oceanography, his basic research on natural climate variability of the Arctic, and the development and application of global earth system models to various climate phenomena. Lawrence spoke about long-term changes (from 1500 to the present) in climate, sea ice, ocean properties and wind reconstructed using observations and a global reduced complexity climate model.

Conference “Planet Earth: Present for the Future”

The Conference was held in the Camoes Theatre in Lisbon, Portugal, 20-21 November 2009. The President of the Republic of Portugal, the President of the European Commission, and a personal representative of the UNESCO Director-General addressed the meeting at the opening ceremony.

Research ministers of several countries (Portugal, Cape Verde, Angola, Norway, and Tanzania) presented their national science policies. Several symposia were held during the two-day conference: “Renewable Energy”, “Sustainable Land and Water Management”, “One Geology”, “Planet Ocean”, “Youth and Earth”, “IYPE and International Partners”, “Planet Earth Africa”.

IUGG was invited to give a talk at the “Youth and Earth” Symposium. Alik Ismail-Zadeh presented the IUGG activities related to early career scientists. During Award Ceremony, 17 IYPE National Committees received recognition from the IYPE Corporation: Angola, Austria, Brazil, Canada, France, Germany, Hungary, Italy, Japan, Netherlands, Norway, Poland, Portugal, Sweden, Tanzania, UK, and USA.

IUGG OFFICERS ATTENDED BUSINESS MEETINGS OF THE NATIONAL COMMITTEES

Argentina National Committee for IUGG

During his trip to Buenos Aires to attend the IAG Scientific Assembly, President Tom Beer met the members of the Argentine National Committee of IUGG at the business meeting of the committee. They presented the structure and activities of the National Committee, and Tom Beer held a speech indicating how Argentine geophysicists could help in activities of IUGG, and how IUGG could promote geophysics in Argentina.



Group photo during the business meeting of the Argentine National Committee for IUGG

Russian National Committee for IUGG

A business meeting of the Russian National Committee for IUGG was held in Pereslavl-Zalesky, Russia, on 4 June 2009 in conjunction with the International Conference “Electronic Geophysical Year: State of the Art and Results”. The meeting was chaired by Alexei Gvishiani, President of the National Committee. The IUGG Secretary General Alik Ismail-Zadeh addressed the members of the Committee and spoke about promotion of IUGG science in Russia. The IUGG Secretary General discussed the possibilities for fruitful cooperation and presented the report on the IUGG activity for the last year. The Committee members reported about their activities in IUGG Associations, Committees and Working Groups. The meeting was

attended by the observers from various Russian research institutions related to geodesy and geophysics. The IUGG Secretary General gave an interview for a local newspaper on the topic of how IUGG promotes activity of young scientists.



Group photo after the business meeting of the Russian National Committee for IUGG

German National Committee for IUGG

The business meeting of the German National Committee for IUGG (NKGG) was held on 27 November 2009 at the Bundesanstalt für Geowissenschaften und Rohstoffe, BGR (the IUGG Adhering Organization), in Hanover. Prof. H.-J. Kämpel, President of BGR, presented the Adhering Organization and spoke about the history, the structure, and the scientific activities of the BGR. Furthermore, Prof. Kämpel informed about the IYPE closing event in Lisbon in November 2009. In this context, a new initiative called “The Planet Earth Institute”, which was proposed in Lisbon, was discussed. The IUGG Secretary General Alik Ismail-Zadeh attended the business meeting and informed the NKGG members about the current and planned IUGG activities. Members of the Committee reported on their activities in the IUGG associations, commissions, and working groups. Prof. R. Kind, NKGG President, was re-elected as President for the upcoming time period 2010 – 2014. The minutes of the meeting will be placed on the web page of the Committee (www.bgr.de/nkgg/; in German).

THE INTERNATIONAL COUNCIL FOR SCIENCE (ICSU)

The International Council for Science, formerly known as the International Council of Scientific Unions (ICSU), was created on 11 July 1931. IUGG was one of the original Unions of ICSU and has continued to participate in its programs.

New Executive Director of ICSU

The International Council for Science (ICSU) welcomed Professor Deliang Chen as Executive Director from 1 February 2009. Professor Chen will provide critical leadership as ICSU moves into the exciting second stage of its Strategic Plan 2006–2011. “This appointment reflects ICSU’s commitment to strengthening international science for the benefit of society. Professor Chen brings with him a wealth of expertise, as a leader and an academic, at a key point in ICSU’s evolution.”- said Professor Catherine Bréchnignac, ICSU President, welcoming this appointment.

IUGG officers met the new ICSU Executive Director

IUGG President Tom Beer (on his trip to MOCA-2009) and IUGG Secretary General Alik Ismail-Zadeh met the Executive Director of the International Council for Science (ICSU) Deliang Chen in the ICSU

Headquarters in Paris on 17 July 2009. IUGG expressed its satisfaction that the new management of the ICSU Secretariat intends to become more transparent and streamlined. The IUGG President also expressed the desire of the Union to be more involved in ICSU programs, especially those related to Earth systems. Other topics of discussion included the role of Scientific Unions in ICSU programmes and committees, ICSU and IUGG Grant Programmes, ICSU Regional Offices, and the involvement of young scientists in ICSU activities.



*Meeting in the ICSU Headquarters in Paris:
Tom Beer (left), Deliang Chen, and Alik Ismail-Zadeh*

ICSU Grant Award

The project proposal “The Polar Information Commons (PIC): Establishing the Framework for Long-term Stewardship of Polar Data and Information”, submitted by the ICSU Committee on Data for Science and Technology (CODATA) and supported by IUGG as well as several other organizations, has been awarded EUR 30,000. The IUGG Commission for Data and Information (UCDI) and International Association of Cryospheric Sciences (IACS) will contribute to this project. IUGG/UCDI believes that the International Polar Year (IPY) is ICSU's big opportunity to respond pre-emptively to adhere to its grand visions of being a leader in data science and stewardship. The interdisciplinary breadth of IPY has thoroughly tested the limits of current national and international data systems and scientific cultures. A Polar Information Commons could be a significant step in truly enabling interdisciplinary science and could provide a framework that could extend to other ICSU initiatives.

ICSU World Data System Transition Team (WDSTT) business meeting

The General Assembly of the International Council for Science (ICSU) held in Maputo (Mozambique) in October 2008 decided to establish a new World Data System as an Interdisciplinary Body to replace the World Data Centers and Federation of Astronomical and Geophysical Data Services. To assist in this development, ICSU created the ad hoc transition team to prepare a term of references (ToR) and to draft a plan of actions for the WDS Scientific Committee (to be established this year by ICSU).

The team, WDSTT, held its business meeting in the ICSU Secretariat in Paris from 9 to 11 March 2009. On 10 March ICSU invited representatives of three ICSU Unions (IUGG, International Astronomical Union, and International Union of Radio Sciences) and of key partners (IOC, GEO, IPY, and CODATA) to attend the WDSTT meeting. The Secretary General A. Ismail-Zadeh represented IUGG. The aim of this joint meeting was to clarify the role of the ICSU Unions and key partners in the development of the new WDS. M. Mokrane (ICSU) presented the ICSU 2009-2010 goals to establish the WDS Scientific Committee.

It was suggested that ICSU Unions could take part in the procedure for the accreditation of new WDS units (data centers and services). A relevant ICSU Union should endorse all new applications for membership in the WDS. ICSU agreed that Scientific Unions should be invited to WDS General Assemblies to discuss

scientific plans and activities. The ToR of the WDS Scientific Committee should include linking the WDS-SC with ICSU Unions and key partners.

The IUGG Commission for Data and Information committed to assist in the establishment of the new WDS. For many years IUGG financially supported FAGS services. IUGG decided to continue its support to geophysical data services and data centers till 2011, because this financial support is important for many geophysical services as seed funding to enable them to raise national funding for research.

Natural Hazards and Disasters

The Scientific Committee of the new Interdisciplinary Body of ICSU, Integrated Research on Disaster Risk (IRDR) held its first meeting in May during the first World Social Science Forum. The committee, chaired by Gordon McBean (former IUGG Bureau member), discussed joint projects with other organizations and programmes, and began setting up working groups that will shape IRDR in its initial phase. Kuniyoshi Takeuchi, a distinguished expert in water-related risk and management and Chair of the IUGG Union Commission on Geophysical Risk and Sustainability, is a member of the Scientific Committee of IRDR.

The United Nations International Strategy for Disaster Reduction (UN-ISDR) has joined ICSU and the International Social Science Council (ISSC) as co-sponsor of IRDR. The ISDR Scientific and Technical Committee has recommended to the United Nations Global Platform for Disaster Risk Reduction that governments support systematic programmes of scientific research, observations and capacity building at national, regional and international levels underlining the importance of the new ICSU-ISSC-ISDR programme in providing a new and important framework for global collaboration. The location of the IRDR International Programme Office will be in Beijing.

Visa problems

In February 2009, a letter was sent to all ICSU Members regarding delays in the processing of visa applications for scientists entering the USA. This problem related particularly to some nationalities and was not only limited to the USA (see the letter at the ICSU web-site:

http://www.icsu.org/5_abouticsu/PDF/Letter_Members_US_Visas_26Feb09.pdf). In June, Deliang Chen, the ICSU Executive Director, paid a visit to the U.S. State Department, with the assistance of the National Academy of Sciences (ICSU's National Member in the USA). The issue of visa difficulties was raised with David Donahue, Deputy Assistant Secretary at the Bureau of Consular Affairs. Many international scientists have experienced problems when applying for visas, particularly for attending conferences in the US. During the open discussion, Donahue outlined recent progress on this issue and encouraged ICSU to help identify specific cases so the problems can be redressed. Despite the ICSU efforts and the efforts of the U.S. National Academy of Sciences, the IUGG Secretary General Alik Ismail-Zadeh could not get a U.S. visa (until after his plane had departed) to attend the AGU Fall Meeting in San Francisco in December 2009 (*The Economist* magazine mentioned the existing visa problem in the article "Bin Laden's legacy" http://www.economist.com/world/united-states/displaystory.cfm?story_id=15270716)

Cooperation between IUGG and the ICSU Regional Office for Africa

The IUGG Commission on Geophysical Risk and Sustainability (GRC) together with IASPEI, IAMAS and IAHS collaborated with the ICSU Regional Office for Africa (ROA) on two IUGG natural hazards projects: "Dust events and impacts in Africa" and "Enhancement of geohazards research capacity in sub-Saharan Africa". To discuss the progress in the development of the projects, Kuni Takeuchi (Chair, GRC) and Gerd Tetzlaff (Secretary General, GRC) met Sospeter Muhongo (Director, ICSU ROA) and Abdourahmane Konare (co-leader of the project on dust events) in Leipzig (Germany) on 3 March at the occasion of the 600th anniversary of the University of Leipzig. A. Konare reported progress in coordinating contributions of African researchers to the topics of droughts and floods. Three river basins are of special interest to Africa: Nile, Volta, and Zambezi. K. Takeuchi pointed out that it is important to take up the ICSU Integrated Research on Disaster Reduction (IRDR) program clarifying the relation of the projects with respect to the IRDR objectives. The importance of capacity building, case studies, and cooperation with the partners

outside of Africa had been emphasized. Three objectives of the projects are considered to be most important: (i) the assessment of climate change impact on disaster risk based on climate model outputs and hydrological model simulations; (ii) the statistical analysis of historical, meteorological, and hydrological extreme events; and (iii) case studies of large historical disaster events (including success, failure, and lessons learned).

ICSU GEOUNIONS

IUGS Executive Committee Meeting

The Executive Committee of the International Union of Geological Sciences (IUGS) met in Sydney, Australia, in January. In the tradition of collaboration among the ICSU GeoUnions, IUGG President Tom Beer was invited to attend the meeting during which matters of common interest to the two Unions were discussed. Among them were the discussion on the 2012 International Geological Congress to be held in Brisbane and the 2011 IUGG General Assembly in Melbourne, on the ICSU GeoUnions Consortium, and the International Lithosphere Program (IUGG-IUGS Commission on Lithosphere).

ICSU GeoUnions Past and Potential Collaboration with IGBP

The International Geosphere-Biosphere Programme (IGBP) is an international scientific research program that studies the interactions between biological, chemical, and physical processes and how they impact with (and are impacted by) human systems (<http://www.igbp.net/>). The Programme is built on interdisciplinarity, international networking, and scientific integration. It addresses questions where an integrated, international approach is necessary. IGBP adds value to a large number of individual, national, and regional research projects through the integration of activities in order to achieve enhanced scientific understanding of the Earth System.

ICSU GeoUnions evaluated the past collaboration with IGBP and have drawn their vision on potential future collaboration. For a considerable period, IUGG has been concerned about the lack of formal interaction between IGBP, which is a direct program of ICSU, and the ICSU Union members. Since the inception of IGBP we dutifully designated a liaison officer to IGBP, and in the early days all of the liaison officers were listed on the IGBP web site. During the past decade, IGBP's interest has concentrated on National IGBP committees, and in 2007, IUGG abolished the IGBP liaison position because there was no designated role for this position. IUGG would like to improve the communication and collaboration with IGBP especially because CACGP (one of the Commissions of IAMAS, which is an IUGG Association) and IGBP have been co-sponsors of the IGAC (International Global Atmospheric Chemistry) project since 1990. In addition, CACGP (Commission on Atmospheric Chemistry and Global Pollution) is a co-sponsor of the SOLAS (Surface Ocean-Lower Atmosphere Study) project, which has four sponsors – IGBP, SCOR, CACGP, and WCRP. IUGG believes that one way to help would be for IGBP to sponsor more sessions that are relevant to IUGG issues at IUGG and appropriate Association Assemblies.

THE ELECTRONIC GEOPHYSICAL YEAR (EGY)

The mission and goals of the Electronic Geophysical Year (eGY) are being carried forward through several national and international organizations. These include the following:

- eGY-Africa
- CODATA Task Group: International Polar Year Data Policy and Management Subcommittee
- IPYDIS
- AGU - Earth and Space Science Informatics
- GSA - Division of Geoinformatics
- EGU - Earth and Space Science Informatics
- IUGG - Union Commission for Data and Information
- IUGS - Commission for the Management and Application of Geoscience Information
- eGY representation on ICSU's Strategic Coordinating Committee for Information and Data
- ICSU World data center working group

- CODATA Task Group: “eGY Earth & Space Science Data Interoperability”
- COSPAR's Panel for Informatics
- Two new ICSU committees formed as a result of the report of the ICSU Strategic Committee on Information and Data. As outlined in the committee report, the committees are “A scientific committee for the World Data System” (WDS-SC) and “A Strategic Coordinating Committee on Data and Information” (SCCID)

The Electronic Geophysical Year formally ended on December 31st, 2008, exactly 50 years after the IGY ended formally in 1958.

Africa and the Digital Divide

eGY-Africa (www.egy.org/egyafrika.php) is an initiative by African scientists and supporters to secure better Internet connectivity for scientists and educators in African Universities and similar institutions. The initiative was started by the IUGG *Geoscience in Africa Program* during the Electronic Geophysical Year, 2007-2008 (www.egy.org). It is a response to concerns about the growing isolation of African scientists as the conduct of science and education worldwide becomes Internet-dependent. eGY-Africa is being developed in partnership with ICSU's Regional Office for Africa (ROA) and other bodies with related objectives. Unlike many projects in Africa that are directed at achieving a specific scientific outcome, eGY-Africa is truly a capacity-building exercise.

THE INTERNATIONAL HELIOPHYSICAL YEAR (IHY)

The IHY had three primary objectives:

- Advancing our Understanding of the Fundamental Heliophysical Processes that Govern the Sun, Earth and Heliosphere,
- Continuing the tradition of international research and advancing the legacy on the 50th anniversary of the International Geophysical Year,
- Demonstrating the Beauty, Relevance and Significance of Space and Earth Science to the World.

IHY has officially closed as of March 2009. Many aspects of IHY are being continued through the International Space Weather Initiative.

THE INTERNATIONAL YEAR OF PLANET EARTH (IYPE)

IYPE Board Meetings

The IYPE Board of Directors met on 26 January at the Burlington House of the Geological Society in London. The Board discussed its composition, evaluated the work of the IYPE Secretariat for last two quarters of 2008, estimated the financial condition of the Corporation and expectations for 2009-2010, discussed and accepted reports by the chairs of the Development, Outreach and Science programs. The Board discussed in depth the IYPE future development; particularly, the importance of bringing together geosciences families; future of the National Committee for IYPE; global international geoscience program; new generation of Earth scientists; outreach activities. The IYPE legacy Book series will be published by Springer in 2009-2010. The Board discussed several IYPE events foreseen for 2009 (in conjunction with the GSA Annual Meeting in Portland, Oregon, USA in October; Young Earth Scientists Congress in Beijing, China, October; the Planet Earth Conference in Lisbon, Portugal in November, and the AGU Fall Meeting in San Francisco, California USA in December).

The IYPE Board meeting was held on 19 November 2009 in Lisbon (Portugal). Several important topics were considered at the meeting: status of the corporation; activities of the IYPE Secretariat in 2009 and expectations for 2010; financial review of IYPE activities in 2007-2008, implementation of the IYPE budget for 2009, and proposed budget for 2010; reports of the Development, Outreach and Science committees; discussion on the IYPE national committees and IYPE international events in 2009-2010, IYPE legacy; and the future scientific and outreach activities. A technical report on the IYPE triennium is to be presented to the

United Nation as well as to the IYPE Founding and International Partners. The financial reports for 2007 and 2008 were approved unanimously. The Board discussed the outreach activities, specifically the production of the new Planet Earth books, Planet Earth TV program, and IYPE exhibitions. Also the Board discussed a current status of the IYPE-Springer book series. It was reported that the first book on the Deep Earth was already published (Eds. S. Cloetingh and J. Negendank, ILP) and the next one on Geophysical Hazards is in press (Ed. T. Beer, IUGG). Many IYPE National Committees were active in 2009. The joint meeting of the Science Program Committee and representatives of the African national committees were held in 2009 in Pretoria, South Africa. The IYPE initiative to develop a major geoscience program will be discussed in San Francisco at the AGU Fall Meeting, December 2009, and in Vienna at the EGU General Assembly, May 2010. Ed de Mulder, Executive Director of the IYPE Corporation, reported on the major items of the IYPE legacy: OneGeology project, series of IYPE books, etc. During discussion it was emphasized that one of the major achievement of the IYPE was fruitful cooperation of many geosciences unions and societies worldwide, industrial partners, media and representatives of the government, aimed to highlight the achievements of Earth scientists and to show the importance of our science for society.

IYPE Meeting of Science Theme Leaders

The International Year of Planet Earth Meeting of Science Theme Leaders and African Chairs of National IYPE Committees was held in Pretoria (South Africa) on 18-19 May 2009. This meeting was organized by Sospeter Muhongo (Chair of the IYPE Science Programme Committee). Muhongo is also the Director of the ICSU Regional Office for Africa (ROA) so that the meeting, though ostensibly about IYPE issues, actually dealt with the ROA Science Plans as well. There are 10 Science Themes of the IYPE. Three Theme Leaders managed to attend: Tom Beer (Hazards Theme Leader), Frauke Kraas (Megacities Theme Leader), and John Dodson (Climate Theme Leader). In addition, the Health Theme was represented by Theo Davies, and the Groundwater Theme and Deep Earth Theme sent written reports. Most of the themes are on track to prepare IYPE 'Legacy Volumes' to be published by Springer later this year. The meeting started with the Science Theme presentations. There followed two general presentations: one on the first congress of Young Earth Scientists (YES2009) to be held in Beijing, 24-28 October 2009. The second general presentation was by Hassina Mouri, Secretary General of the Geological Society of Africa (GS Af). Five updates on ROA programmes were also presented.

First World Congress for Young Earth-Scientists

The First World Congress for Young Earth-Scientists (YES Congress) was held at the University of Geosciences, Beijing, China on 25-28 October 2009. The YES network is an association of earth scientists under the age of 35 years representing geological societies from around the world, in collaboration with the International Year of Planet Earth (IYPE). This congress focuses on global climate, environmental and geological challenges facing today's society, and aims to establish an interdisciplinary global network of individuals committed to solving these challenges. This congress was supported by the International Year of Planet Earth (IYPE), IUGS, UNESCO, and some other organizations. More than 300 participants from about 40 countries and regions over the world participated in the congress. 14 topical sessions and 9 roundtable symposia were held during the congress. The 14 topical sessions covered the topics of the IYPE, namely, underground water, disasters, Earth and health, energy, climate, mineral resources, megacities, deep Earth, ocean, soils, Earth and life, as well as the Tibet Plateau upward, shifting, and global changes, digital Earth engineering, geoheritage conversation and geoparks. The 9 roundtable symposiums contained issues facing global geoscience education and research; natural hazards; climate change; natural resources and energy sustainability; international licensure; industry-academic linkages; women in the geoscience workforce; synthesis and strategy; and geology philosophy of China and geological culture. IUGG was represented at the congress by Jianping Li, the Secretary General of the Chinese National Committee for IUGG. He is the member of the YES International Scientific Council and was the Scientific Council Advisor of the Roundtable symposium 3 on Climate Change. The next YES Congress will be held in conjunction with the 34th International Geological Congress in Brisbane, Australia (August 2012, www.34igc.org)

THE INTERNATIONAL POLAR YEAR (IPY)

Two years on from the official launch of the International Polar Year 2007-2008 (IPY), ICSU and the World Meteorological Organization (WMO) hosted a celebration in Geneva, Switzerland, on 25 February 2009.

The IPY, a joint initiative of ICSU and WMO, has been an intensive burst of interdisciplinary, scientific research and observations focused on the polar regions. Thousands of scientists from around the world have been involved in more than 160 research projects, which have significantly advanced our understanding of the nature and behavior of the polar regions and their role in the functioning of the planet. To celebrate the success of the IPY and release the *State of Polar Research*, an eight-page report outlining the preliminary findings of the IPY, a special ceremony was held at WMO headquarters in Geneva on 25 February. This was preceded by a press conference at the Palais des Nations. *Our Polar heritage*, a photographic exhibition of scientists at work in the polar regions, was also officially opened on 24 February at the Palais de Nations.

Dr. Ian Allison, President of the International Association of Cryospheric Sciences and co-Chair of the IPY Joint Committee, represented IUGG at this event.

ACTIVITIES OF THE UNION ASSOCIATIONS

The following reports, prepared by the Secretaries General of the eight Associations of IUGG:

International Association of Cryospheric Sciences (IACS)

International Association of Geodesy (IAG)

International Association of Geomagnetism & Agronomy (IAGA)

International Association of Hydrological Sciences (IAHS)

International Association of Meteorology & Atmospheric Sciences (IAMAS)

International Association of the Physical Sciences of the Oceans (IAPSO)

International Association of Seismology & Physics of the Earth's Interior (IASPEI)

International Association of Volcanology & Chemistry of the Earth's Interior (IAVCEI)

The reports illustrate the impressive range of activities within each Association as well as their dedication to supporting science within developing countries.



International Association of Cryospheric Sciences (IACS)

www.cryosphericsscience.org

INTRODUCTION

The International Association of Cryospheric Sciences (IACS) aims to promote the study of the Cryosphere in all of its aspects. IACS strives (i) to promote studies of all aspects of, and physical processes related to, the Earth's cryosphere and that of other bodies of the Solar System; (ii) to encourage research on these subjects by the cryospheric sciences community, through national and international institutions and programmes, and by individual countries as well as through collaboration and international co-ordination; (iii) to provide an international platform for discussions and publications of results arising from research activities as mentioned above; (iv) to promote education and public outreach on cryospheric processes and cryospheric research, and (v) to facilitate the collection of data on cryospheric systems through standardized measurements and to promote the analysis, publication and archiving of such data.

ADMINISTRATION

General Activities of the Bureau

Members of the IACS Bureau comprise:

- Ian Allison (President)
- Georg Kaser (Past-President)
- Kumiko Goto- Azuma (Vice-President)
- Gino Casassa (Vice-President)
- Peter Jansson (Vice-President)
- Manfred Lange (Secretary General)
- Julian Dowdeswell (Head, Division Glaciers and Ice Sheets)
- Charles Fierz (Head, Division I: Snow and Avalanches)
- Claude Duguay (Head, Division II: Marine and Freshwater Ice)
- Ralf Greve (Head, Division III: Planetary and Other Ices of the Solar System)
- Valérie Masson Delmotte (Head, Division IV: Cryosphere, Atmosphere and Climate)

Bureau Meetings/Work by the Bureau during the Reporting Period

We utilized the Joint IAMAS-IAPSO-IACS Assembly MOCA09 in Montreal in July 2009 (see below) for two Bureau Meetings and one IACS Plenary, in accordance with the IACS Statutes and Bylaws.

The *first Bureau meeting* took place at the Auberge Bonaparte, Montreal, Canada on July 18 and 19, 2009. It was devoted to internal matters and attended by IACS Bureau members only (except for IUGG President Tom Beer and Ross Brown from the MOCA09 local organizing Committee), while the meeting on the 19th was an open meeting with a number of delegates from other Associations or organizations present. The meeting on July 18th also saw the change in the Presidency of the Association from Georg Kaser to Ian Allison. After reviewing action items that arose from the Perugia and Vienna Bureau meetings, then-

President Georg Kaser delivered the President's Report. This was followed by President Elect Ian Allison to take over the position of the IACS President. The Treasurer's Report was delivered by Secretary General Manfred Lange and subsequently accepted; the Budget Plan for 2010 and beyond was briefly discussed.

Details of the publication procedures for the new Snow Classification, which was prepared under the leadership of Charles Fierz (see below) were presented.

An important issue was the forthcoming of the resignation of Wilfried Haerberli as Director of the World Glacier Monitoring Service (WGMS) and the role that IACS may/will play in facilitating the appointment of his successor.

The second day (19 July) was an open meeting with a relatively large number of guests present: Tom Beer (IUGG President), Gordon Young (IAHS President elect), Richard Essery (SnowMIP2), John Pomeroy (ICSI-H President), Volker Rachold (IASC Secretary General), Lawrence Mysak (IAPSO President), Anette Rinke (CLiC), Liz Thomas (APECS), Graham Cogley (Glacier Mass Balance Terminology), Hans Volkert (IAMAS Secretary General), Jo Jacka (IGS Chief Editor), Wilfried Häberli (WGMS Director), Guoxiong Wu (IAMAS President), and Shichuang Kang (Chinese IACS National Committee).

After being welcomed by Ian Allison, IUGG President Tom Beer gave a brief address on behalf of IUGG. The Director of the WGMS, Wilfried Haerberli presented a report on WGMS and its present status. ICSI, UCCS and IACS have been for a long time and are currently advisory bodies to the WGMS. Ian Allison expressed his gratitude to Wilfried Haerberli for his work as WGMS Director. He also thanked him for securing continued funding from the Swiss government.

This was followed by brief presentations by many of the guests present on behalf of the organizations they represent.

More details of this meeting can be found in the Minutes, which will be posted on our web-site shortly.

The *second Bureau meeting*, chaired by Ian Allison took place at the Palais des Congrès, Montreal, Canada on July 24, 2009. Items discussed included:

- The auditing of the IACS Budget and its approval;
- The IACS web-site and its maintenance;
- The IACS Assembly 2013, particularly in light of possibly joining forces with IAMAS;
- The possible enhancement of educational activities within IACS and in collaboration with other organizations.

Again, more details of this meeting can be found in the respective Minutes, which will be posted on our web-site shortly.

In addition to the Bureau meetings, members of the Bureau have been in regular e-mail contact with each other during the reporting period.

IACS Plenary

The Second IACS Plenary Meeting took place at the Palais des congrès de Montréal, Canada, on July 23, 2009. After welcoming the participants, Ian Allison gave a brief introduction into IACS and its predecessors. Past President Georg Kaser presented an account of past activities after IACS' official inauguration at the IUGG General Assembly in Perugia, Italy. The main results of the 3rd IACS Bureau Meeting, which took place prior to the opening of MOCA09 in Montreal on July 18 and 19, 2009, were briefly reviewed by Secretary General Manfred Lange. This was followed by Ian Allison addressing a number of future activities related to IACS and of relevance for those interested in Cryospheric Sciences. In the open discussion on "Gaps and new directions" that took place as the next point on the agenda, a number of items were put forward and were lively discussed by participants present. Detailed Minutes of the Plenary will be posted on our web-site shortly.

ACTIVITIES

During the relatively short reporting period, IACS has taken up a number of activities. These comprise:

Book on Snow and Climate published

The book *Snow and Climate* has recently been completed by the editors Richard L. Armstrong and Eric Brun and has been published at Cambridge University Press (see <http://www.cambridge.org/uk/catalogue/catalogue.asp?isbn=9780521854542> for more details). This is the result of a former Working Group within IACS' predecessors ICSI/UCCS.

IACS Snow Classification

Led by Charles Fierz, a Working Group on Snow Classification has finalized the work on a comprehensive classification of snow in all its natural appearances. This is an update on an earlier version of the Snow Classification that was also put together by the IACS predecessor ICSI under the chairmanship of Sam Colbeck. The new Classification (*International Classification for Seasonal Snow on the Ground*) will be published by the International Hydrological Programme of the United Nations Educational, Scientific and Cultural Organization (UNESCO-IHP), Paris, in the series of *IHP Technical Documents in Hydrology*, but is already available as an electronic IACS publication at http://www.cryosphericciences.org/snow_class.html.

Standing Group on Mass Balance Terminology

Under the leadership of Prof. Graham Cogley, a Working Group on Mass Balance Terminology has been making impressive progress (for more details, see http://www.cryosphericciences.org/wg_mb.html). One of the major products derived from this Group will be a *Glossary of Mass-balance Terms*, which is largely finalized. Starting from about 250 entries in July 2009, about 30 additional ones are expected before a complete draft of the whole Glossary will be available. During the Bureau meeting on July 18, Georg Kaser addressed the possible publication options for the Glossary and explained that a consensus had evolved for having both a PDF- as well as a printed version.

Joint IAMAS-IAPSO-IACS Assembly MOCA09 “Our Warming Planet”

IACS, together with IAMAS and IAPSO, was one of the partners in the Joint Assembly MOCA09 “Our Warming Planet” (www.moca-09.org), which was convened in Montreal, Canada from July 19 to 29, 2009 (IACS Symposia were limited to July 19 to 24). The topic of the Assembly (“Our Warming Planet”) has attracted a large number of contributors (to date app. 2000 abstracts have been submitted). A total of **1339** delegates of whom 129 were registered as IACS delegates participated in the Assembly.

As somewhat of an innovative element of the Assembly, most of the symposia were organized jointly between the three Associations. A total of 21 joint symposia on topics from embracing “Tropical Cyclones” to “Ice cores in Paleoclimate” were organized and carried out.

In addition, IACS organized five symposia that are specially geared towards the Cryospheric community (http://www.moca-09.org/e/02-symposia_iacs_e.shtml).

During the Assembly, 1871 papers were presented of which 1061 (62) were oral presentations, 586 (339) were poster presentations and 221 (25) were invited presentations (numbers in parentheses represent IACS presentations).

IACS-co-sponsored Conferences and Workshops and IUGG Support

IACS co-sponsored a number of conferences and workshops and supported applications for support from the IUGG for these events, specifically:

- the Conference “Ice and Climate Change: A View from the South”, to be held in Valdivia, Chile, from 1 to 3 February 2010;
- the “International summer school/workshop in glaciology”, to be held in Fairbanks and McCarthy, Alaska, from 7 to 15 June 2010;

- the Conference “Cryospheric Changes and Influences – Cryospheric Issues in Regional Sustainable Development”, to be held in Lijiang, China, from 12 to 14 August 2010.

All three events will be supported by the IUGG.



Studies of ice cores help to improve our understanding of climate dynamics and change

IUGG General Assembly in Melbourne, Australia, 2011

Preparations for the next IUGG General Assembly are well underway. IACS, together with the other IUGG Associations, is one of the organizers of the event. Manfred Lange is part of the Scientific Program Committee, which is chaired by Dr. Peter Manins. In October 2009, an organizational meeting took place in Melbourne, which was attended by Ian Allison.

Similar to MOCA09, an emphasis of the General Assembly will lie on joint Inter-Association Symposia. As a full Union Assembly this meeting will also include Union symposia, which will forge interdisciplinary links across many Associations. IACS has a particular interest in Union Symposia on sea level and on climate change. The scientific program for the Assembly is almost complete. IACS involvement will include two Union Symposia, 22 Inter-Association Symposia and six IACS-only symposia. In addition, there will be about ten IUGG Union Symposia during the General Assembly.

Manfred Lange, IACS Secretary General



International Association of Geodesy (IAG)

<http://www.iag-aig.org>

INTRODUCTION

The structure of IAG comprises components and sub-components. The components are four Commissions, fifteen scientific Services, the Global Geodetic Observing System (GGOS), and the Communication and Outreach Branch (COB). Sub-components are the Inter-Commission Committee on Theory, and the Sub-commissions, Projects and Study Groups within the Commissions. The administration is supervised by the Council and operated by the Bureau, the Executive Committee and the Office. The outreach is done by the COB. All these entities are in steady contact and inform about their activities through the IAG Newsletter and the bi-annual IAG Reports (Travaux de l'AIG).

ADMINISTRATION

IAG Council

The list of national representatives forming the IAG Council was regularly updated in contact with the IUGG Secretary General. Doubtful nominations (double, questionable) were cleared up. The Council was informed about activities of the Bureau and the Executive Committee.

IAG Executive Committee (EC)

The IAG EC met in Buenos Aires, Argentina, August 30, 2009. The meeting summary is published in the IAG Newsletter in the IAG Journal of Geodesy (Springer). It is also available online on the IAG Homepage (<http://www.iag-aig.org>). Important topics were the IAG Scientific Assembly 2009 in Buenos Aires (see 3.7) with eight thematic sessions and 363 participants, the discussion of the bi-annual IAG Reports (Travaux de l'AIG), changes in the structures of some Services, sponsoring of symposia, and the links to other organizations.

IAG Bureau

The IAG Bureau, consisting of the President, the Vice-President and the Secretary General, held regular teleconferences and met in Buenos Aires, August 31, and in Melbourne, October 11, 2009. The President and Secretary General participated in the IUGG Executive Committee Meeting in Melbourne, October 9–11, 2009. IAG was represented by the President at the 50th anniversary of the International Cartographic Association, Bern, June 9–10, and by the Secretary General at the 10th anniversary of the International VLBI Service (IVS), Bordeaux, March 25–26, 2009. Bureau members represented IAG in various other meetings.

ACTIVITIES

IAG Office

A main activity of the IAG Office was the preparation and execution of the IAG Scientific Assembly 2009 and the edition of the Mid-Term Reports 2007–2009 (Travaux de l'AIG Vol. 36). Publications of the Journal of Geodesy and the Proceedings in the IAG Symposia series, both in Springer, were supervised. Travel grants were assigned to young scientists. The personal IAG memberships were regularly updated, the membership fee was collected. IAG EC meetings were prepared; this includes detailed minutes and meeting summaries.

Communication and Outreach Branch (COB)

The COB continued its main tasks of maintaining the IAG Homepage and publishing the monthly Newsletter online and in the Journal of Geodesy. It prepared, printed and distributed a new IAG leaflet and a big IAG brochure.

Commissions and Inter-Commission Committee

The four IAG Commissions and the Inter-Commission Committee on Theory compiled their mid-term reports (published in the IAG Report 2007-2009). They are maintaining their individual Homepages. Some of the Commissions held symposia and meetings (see 3.7).

Services

The fifteen IAG Services compiled their mid-term reports for the IAG Report 2007-2009. They are maintaining their own Homepages (accessible via <http://iag.dgfi.badw.de>) and data servers and hold their administrative meetings (Directing Board or Governing Board, respectively). Several Services held international meetings (see 3.7).

Global Geodetic Observing System (GGOS)

The GGOS Reference Document (330 pages) was published in Springer (Editors: Plag and Pearlman). It contains many individual articles with a description of all aspects of the Global Geodetic Observing System written by a very large number of authors. GGOS Steering Committee meetings were held in Vienna, Austria, 18 April, in Buenos Aires, Argentina, August 30, and a GGOS Workshop in San Francisco, USA, December 11-12, 2009.

Coordination with other organisations

The close connection of IAG with the Joint Board of Geospatial Information Societies (JBGIS, <http://www.fig.net/jbgis/>) was continued by e-mails, internet contacts and participation in meetings of the partner associations. The participation of IAG in the inter-governmental Group on Earth Observation (GEO) is continued.

Meetings

Important meetings of IAG components and IAG sponsored bodies in 2009 were:

- 3rd Workshop Deformation and Gravity Change, Lanzarote, Spain, February 23–26, 2009;
- Workshop on Future Radio Frequencies and Feeds, Wettzell, Germany, March 18–21, 2009;
- 10th Anniversary of the International VLBI Service, Bordeaux, France, March 25, 2009;
- International VLBI Service (IVS) Analysis Workshop, Bordeaux, France, March 26, 2009;
- 5th IVS Technical Operations Workshop, Westford, USA, April 27–30, 2009;
- European Reference Frame (EUREF) Symposium, Florence, Italy, May 27–30, 2009;
- Training School on GIA Modelling, Gävle, Sweden, June 1–5, 2009;
- 8th International Workshop on e-VLBI Science, Madrid, Spain, June 22–26, 2009;

- Global Geodetic Observing System (GGOS) Workshop, Espoo, Finland, June 23–26, 2009;
- VII Hotine-Marussi Symposium on Theoretical Geodesy, Rome, Italy, July 6–10, 2009;
- IAG-SIRGAS School on Reference Systems, Bogotá, Colombia, July 13-17, 2009;
- 16th Advisory Board on the Law of the Sea (ABLOS) conference, Nusa Dua Bali, Indonesia, August 4–5, 2009;
- IAG Scientific Assembly 2009, Buenos Aires, Argentina, August 31 – September 4, 2009;
- American Reference System (SIRGAS) General Meeting, Buenos Aires, Argentina, August 31 – September 4, 2009;
- International School on Geoid Determination, Buenos Aires, Argentina, September 7–11, 2009;
- ILRS Technical Workshop on SLR Tracking of GNSS, Metsovo, Greece, September 14–19, 2009;
- International Earth Rotation and Reference Systems Service (IERS) Workshop on EOP Combination and Prediction, Warsaw, Poland, October 19–21, 2009;
- 2009 Workshop on the North American Geoid, Boulder, USA, October 21–23, 2009;
- GGOS Intergovernmental Committee meeting, Frankfurt, Germany, November 2–3, 2009;
- Second GGOS Unified Analysis Workshop, San Francisco, USA, December 11–12, 2009.



At the 2009 IAG Scientific Assembly

Publications

The monthly issues of the Journal of Geodesy were continuously published in Springer. The proceedings of the IAG sessions at the IUGG General Assembly, Perugia 2007, and of the IAG Symposium on Reference Frames, Munich 2006, were published in the series of IAG Symposia at Springer, and the Reference Book on GGOS was published as a monograph in Springer.

Awards, anniversaries, obituaries

The IAG Young Authors Award 2009 was given to Franziska Wild-Pfeiffer, Stuttgart. The 10th Anniversary of the International VLBI Service for Geodesy and Astrometry was celebrated in Bordeaux, France, March 25, 2009. Obituaries were written for former IAG officers and outstanding geodesists who passed away in 2009: Lubomir Wlodzimerz Baran, Poland, Kurt Bretterbauer, Austria, Werner Gurtner, Switzerland, Irene Fischer, USA.

PLANNED FUTURE ACTIVITIES

In 2010, there will be several symposia and workshops of the IAG Commissions (Reference Frames, Gravity Field, Earth Rotation, Applications) and Services (IGS, IERS, ILRS, IVS) and meetings during interdisciplinary assemblies (e.g., American Geophysical Union, European Geosciences Union, Fédération Internationale des Géomètres, International Astronomical Union).

The Global Geodetic Observing System (GGOS), as the “flagship” of IAG will undergo a re-organization by installing a Coordinating Office and an Internet Portal. The IAG Bureau, the Executive Committee, and all IAG components will supervise the whole procedure.

Hermann Drewes, IAG Secretary General



International Association of Geomagnetism and Aeronomy (IAGA)

www.iugg.org/IAGA/

INTRODUCTION

IAGA, the International Association of Geomagnetism and Aeronomy, is the premier international scientific association promoting the study of terrestrial and planetary magnetism and space physics.

ADMINISTRATION

New Member of the IAGA Executive Committee

During the XIth IAGA Scientific Assembly in Sopron, Hungary, Mioara Mandea – member of EC - was elected IAGA Secretary General. For the vacant position in the EC, Toshihiko Iyemori, Graduate School of Science, Kyoto University, Japan, was appointed until the next ordinary election in 2011.

IAGA Executive Committee

The Executive Committee of IAGA met four times during XIth IAGA Scientific Assembly. Among the matters dealt with by the EC the following should be mentioned: change of the way the location of Scientific Assemblies is determined, procedure for deciding the location of the 2013 IAGA Assembly, lead role of IAGA in IUGG activities concerning data and information management.

ACTIVITIES

The year 2009 was marked by the XIth IAGA Scientific Assembly in Sopron, Hungary.

By the end of summer in Hungary and a few days after hosting German Chancellor Angela Merkel visiting for the twentieth anniversary of the Pan-European Picnic, Sopron, a town well-known for both its old and recent history, opened its gate to some 800 geoscientists ready to enjoy the XIth IAGA Scientific Assembly. The Scientific Assembly covered all scientific fields of interest in the Association, with 56 sessions and 2 inspiring Association Lectures. The number of contributions was significant, 1250 papers of which 796 were scheduled as oral presentations and 454 as posters. 2009 being the last year of the IGY+50 anniversary years, the Hungarian website of International Year of Planet Earth (IYPE) included brochures about the IYPE themes in the Hungarian language as well as the information about another International Years held in 2007-2009. The role of the Local Organizing Committee (LOC) in outreach and the press program was extremely useful. The Assembly, full of exciting scientific results, was held in a framework of social interaction not only between the scientists, but also with the town inhabitants and its great cultural atmosphere. This Scientific Assembly was one of the very best organized ever, and the LOC, with László Szarka as Chair, did an impressive work.



Participants of the IAGA Scientific Assembly

Springer Science and Business Media B.V. will publish the IAGA Special Sopron Book Series as a sub-series to the IYPE series as a legacy to the Year. The program and abstract book, the videos about the two association lectures are downloadable from the conference website www.iaga2009sopron.hu. The 11th Scientific Assembly also marked the end of the nominal 8-year term of Bengt Hultqvist, the Secretary General. In the Executive Committee of IAGA he represented a genuine wisdom acquired through a long scientific career with extensive leadership and management experience. As Secretary General he combined this wisdom with a developed sense for details and promptness that all IAGA and in particular the National Correspondents benefited from in the daily operation of IAGA business matters.

IAGA-Sponsored Topical Meetings in 2009

IAGA sponsored the following four topical meetings in 2009:

- Natural dynamos, StaraLesna, Slovakia, 30 August - 5 September,
- 2nd International HEPPA Workshop, Boulder, CO, USA, 6-8 October,
- ISSS9, Yvelines, France, 3-10 July,
- Solar wind, Cairo, Egypt, 4-8 December.

IAGA News 46

IAGA News 46 was distributed in January 2010. It can be found at the IAGA web site www.iugg.org/IAGA. Among other things, a number of reports from topical meetings co-sponsored by IAGA can be found there.

FUTURE ACTIVITIES

IAGA is actively involved in preparing the scientific program of the XXV General Assembly of IUGG to be held in Melbourne, 27 June to 8 July 2011.

IAGA is the proper international organization for handling the subject Sun-climate relationships, as agreed by the EC. A programme has been started in this field.

Mioara Manda, IAGA Secretary General



International Association of Hydrological Sciences (IAHS)

<http://iahs.info>

INTRODUCTION

The International Association of Hydrological Sciences (IAHS) promotes the study of all aspects of hydrology through discussion, comparison, and publication of research results and through the initiation of research that requires international cooperation. IAHS Press publishes the bi-monthly Hydrological Sciences Journal, the Red Book Series that includes proceedings of between eight and 12 symposia per year, and other more specialized publications. IAHS maintains strong connections with the International Hydrological Programme of UNESCO and with the Hydrology and Water Resources Programme of the World Meteorological Organisation (WMO).

ADMINISTRATION

At the Joint International Convention of IAHS and IAH (JIC) in Hyderabad, the Presidents of the Association and Commissions elected two years ago took over from their predecessors. So, Prof Gordon Young from Canada became President and Dr Arthur Askew from Australia became Past-President. Two meetings of the Bureau have been held, just before and just after the JIC and their minutes are available on the IAHS Web Site.



*G. Young received the IAHS President's silver plate at the handing over ceremony.
From left to right: K. Takeuchi (former IAHS President), U. Shamir
(former IAHS President and Past-President of IUGG), G. Young,
A. Askew (Past-President of IAHS), and P. Hubert (IAHS Secretary General).*

ACTIVITIES

Joint International Convention of IAHS and IAH

The main event of this year for IAHS has been the Joint International Convention (JIC) of 8th Scientific Assembly of the International Association of Hydrological Sciences (IAHS) and 37th Congress of the International Association of Hydrogeologists (IAH) hosted by the National Geophysical Research Institute (NGRI) in association with the Association of Hydrologists of India (AHI), held at the Hyderabad International Convention Centre (HICC) from 6 – 12 September, 2009. The focal theme of the JIC was "Water: A vital resource under stress: How science can help". The seminar has been inaugurated by Smt. Daggubati Purandeswari, Hon'ble Minister of State for Human Resource Development (Higher Education), Govt. of India and the Inaugural function was followed by an inaugural lecture by Prof. Ghislain de Marsily, Emeritus Professor, University of Paris VI, France on "Freshwater stocks on Earth as ice, surface water, ground water: are we loosing water ?".



Participants of the Joint IAHS-IAH Convention in Hyderabad.

JIC was structured into 22 symposia dealing with almost all topics of hydrological sciences such as Ecohydrology, Hydroinformatics, Ground water sustainability in highly stressed aquifers, Integrated water resources management, Interaction between surface and ground water, Transboundary water management, Isotope hydrology, High mountain snow and ice hydrology, Sediment management in Asian rivers, Flood risk management, Prediction in ungauged basins, Precipitation variability and water resources, New statistics in hydrology, Ground water development and management in hard rock regions, Ground water pollution, Socio-economic issues relevant to ground water etc.. More than 500 delegates from 62 countries attended the Joint convention and presented more than 680 research papers either in 121 oral sessions or in 9 poster sessions.

Other IAHS meetings

Many others scientific events have been organized, sponsored or supported by IAHS and its Commissions and Working Groups in 2009, including the following:

- International Conference on Water, Environment, Energy and Society (WEES-2009), New Delhi, India, 12-16 January 2009
- Recent advances in hydrology for Water Resources Development and XVII Annual Convention of AHI, Vadodara (Gujarat), India, 21-22 January 2009
- International Conference on Implementing Environmental Water Allocations, Port Elizabeth, South Africa, 23-26 February 2009
- 5th World Water Forum, Istanbul, Turkey, 16-22 March 2009

- International Workshop "Genetic and probabilistic methods in hydrology : problems of development and interrelation", Odessa, Ukraine, 26-28 March 2009
- International Workshop on Status and Perspectives of Hydrology in Small Basins, Goslar-Hahnenklee, Germany 30 March - 2 April 2009
- International Conference on Water, Environment and Health Sciences : The Challenges of the Climate Change (ICWEHS), Puebla Cholula, Puebla, Mexico 13-17 April 2009
- HydroEco'2009: 2nd International Multidisciplinary Conference on Hydrology and Ecology: Ecosystems Interfacing with Groundwater and Surface Water. Vienna, Austria, 20-23 April 2009
- GRDC 20th Anniversary Colloquium, Applications of global river discharge datasets provided by the Global Runoff Data Centre, Koblenz, Germany, 24 June 2009
- 1st Suriname Water Resources Information System (SWRIS) – Dialoog, Leysweg, Suriname , 27 August 2009
- WMHE2009, 11th International Symposium on Water Management and Hydraulic Engineering, Ohrid, Macedonia, 1-5 September 2009
- 2nd Int. Conf. BIOHYDROLOGY 2009 : A changing climate for biology and soil hydrology interactions, Bratislava, Slovakia, 21-24 September 2009
- Milutin Milankovitch 130 Anniversary Symposium Climate Change at the Eve of the Second Decade of the Century, Belgrade, Serbia, 22-25 September 2009
- Sustainability of the Karst Environment - Dinaric Karst and other Karst Regions, Plitvice Lakes, Croatia, 23-26 September 2009
- ModelCARE 2009, Wuhan, China, 21-25 October 2009
- Irish National Hydrology Conference 2009 ; Innovative approaches in Hydrology – Putting Research into Practice, Tullamore, Ireland, 10 November 2009
- SWRIS-Hydrometry Workshop, Leysweg, Suriname, 10-11 November 2009

IAHS Publications

In 2009, *IAHS Press* published six issues of the *Hydrological Sciences*. Three issues of the *IAHS Newsletter* have also been published and widely disseminated free of charge, both as hard copies and on the Web.

During the year, *IAHS Press* published 9 *Red Books* including 5 volumes of Hyderabad JIC Proceedings:

- Hydrology in Mountain Regions : Observations, Processes and Dynamics, Edited by Danny Marks, Regine Hock, Michael Lehning, Masaki Hayashi and Robert Gurney, Proceedings of a Symposium held in Perugia, Italy, July 2007, IAHS Publ. 326.
- Role of Hydrology in Water Resources Management, Edited by Hans-Jurgen Liebscher, Robin Clarke, John Rodda, Gert Schultz, Andreas Schumann, Lucio Ubertini & Gordon Young, Proceedings of a symposium held in Capri, Italy, October 2008, IAHS Publ. 327.
- Ecohydrology of surface and groundwater dependant systems : Concepts, methods and recent developments, Edited by Martin Thoms, Kate Heal, Eva Bogh, Antonio Chambel and Vladimir Smakthin, Proceedings of symposium JS1 held in Hyderabad, India, September 2009, IAHS Publ. 328.
- Trends and sustainability of groundwater in highly stressed aquifers, Edited by Makoto Taniguchi, Alyssa Dausman, Ken Howard, Maurizio Polemio and Elango, Lakshmanan, Proceedings of symposium JS2 held in Hyderabad, India, September 2009, IAHS Publ. 329.
- Improving integrated surface and groundwater resources management in a vulnerable and changing world, Edited by Günther Blöschl, Nick van de Giesen, D. Muralidharan, Liliang Ren, Frédérique Seyler, Uttam Sharma & Jaroslav Vrba, Proceedings of symposium JS3 held in Hyderabad, India, September 2009, IAHS Publ. 330.
- Hydroinformatics in hydrology, hydrogeology and water resources, Edited by Ian Cluckie, Yangbo Chen, Vladan Babovic, Lenny Konikow, Arthur Mynett, Siegfried Demuth & Dragan A. Savic, Proceedings of symposium JS4 held in Hyderabad, India, September 2009, IAHS Publ. 331.
- News approaches to hydrological prediction in data sparse regions, Edited by Koray Yilmaz, Ismail Yucel, Hoshin V. Gupta, Thorsten Wagener, Dawen Yang, Hubert Savenije, Christopher Neale,

Harald Kunstmann and John Pomeroy, Proceedings of symposium HS2 held in Hyderabad, India, September 2009, IAHS Publ. 333.

- Groundwater and Climate in Africa, Edited by R. Taylor, Callist Tindimugaya, Michael Owor & Mohammad Shamsudduha, Proceedings of a meeting held at Kampala (Uganda), June 2008, IAHS Publ. 334.
- Hydrological Modelling and Integrated Water Resources Management in Ungauged Mountainous Watersheds, Edited by Wei-Lin Xu, Tian-Qi Ao & Xin-Hua Zhang, Proceedings of a meeting held at Chengdu (China), November 2008, IAHS Publ. 335.

One *Blue Book* has been published: Leonardo da Vinci's Water Theory, by L. Pfister, H.H.G. Savenije & F. Fenicia, IAHS Special Publication n°9.

IAHS Task Force for Developing Countries (TFDC)

The TFDC continued its work and distributed free of charge all IAHS publications (Hydrological Science Journal and the Red Books) to more than 60 selected universities and research institutions in Africa, Asia, South-America and Eastern Europe.

Awards

Prof Keith Beven (UK) has been awarded the International Hydrology Prize, which is administrated together with UNESCO and WMO, for his long career devoted to hydrology and hydrological modeling. Y. Hirabayashi, S Kanae and S. Emori (Japan) received the 2008 Tison Award for their paper “Global projections of changing risks of floods and droughts in a changing climate” co-authored by Taikan Oki and Masahide Kimoto and published in Hydrological Sciences Journal in August 2008.

Cooperation with UNESCO, WMO and IAEA

The close cooperation of IAHS with UNESCO, WMO and IAEA has been continued and these organizations provided generous financial support to many participants of the Hyderabad participants. We also participated as partners to the activities of the UN-Water Group and attended the World Water Assessment Programme meeting held in Perugia. IAHS has been a member of the Board of Governors of the World Water Council from its inception until 2009; Dr Arthur Askew, representing IAHS, played a vital role in rewriting the statutes of the Council. IAHS participated and contributed to the Fifth World Water Forum held in Istanbul in March (Organization of Session 6.4.1 “Data for all - Building the Database: What data should we put in the treasure chest?”). We have been present at the Stockholm water week held in August and will have an increased contribution to this annual event in the future.

IUGG EC meeting and General Assembly

In relation to the IUGG activities, the President and SG attended the IUGG EC meeting held in Melbourne last October and the SG participated to the Scientific Committee in charge of defining the Scientific Program of the next IUGG General Assembly, to be held in Melbourne in July 2011.

Pierre Hubert, IAHS Secretary General



International Association of Meteorology & Atmospheric Sciences (IAMAS)

<http://www.IAMAS.org>

INTRODUCTION

IAMAS is the association of the International Union of Geodesy and Geophysics (IUGG) dealing with all aspects of the gaseous envelope around the Earth and other planets. The main research work is carried out, coordinated and communicated in IAMAS's ten International Commissions (IC), which are in alphabetical order the ICs on *Atmospheric Chemistry and Global Pollution* (ICACGP), on *Atmospheric Electricity* (ICAE), on *Climate* (ICCL), on *Clouds and Precipitation* (ICCP), on *Dynamical Meteorology* (ICDM), on the *Middle Atmosphere* (ICMA), the *International Ozone Commission* (IOC), the ICs on *Planetary Atmospheres and their Evolution* (ICPAE), on *Polar Meteorology* (ICPM), and the *International Radiation Commission* (IRC). The ICs are historically grown from mostly personal initiatives and focus on topics of global extent (ICPAE, ICACGP, ICCL), on combinations of important processes within the Earth's atmosphere (ICCP, ICDM, IOC, IRC, ICAE), or on certain regions within the atmosphere (ICMA, ICPM); for details see the links collected under www.iamas.org/Commissions.html.

The tradition of IAMAS goes back until 1919 as the Meteorology section of IUGG, one of the scientific Unions within the newly established International Research Council (later ICSU; cf. Shaw 1922 [www3.interscience.wiley.com/cgi-bin/fulltext/115304386/PDFSTART]). The extended names '*and Atmospheric Physics*' (1957-1995) as well as '*and Atmospheric Sciences*' (since 1995) reflect the explicit broadening of scope to physical and later also chemical techniques.

All ICs, and IAMAS as a whole, take a leading part within the global communication and discussion of latest research results in a wide range of scientific meetings that are open to all scientists. Personalities of many countries serve voluntarily as presidents and secretaries for all these bodies. This network forms an important supplement and extension to research activities and applications overseen by the national meteorological services (NMS) under the umbrella of the *World Meteorological Organization* (WMO), a specialized agency of the *United Nations*.

ADMINISTRATION

For IAMAS, officers and members at large were routinely elected at the IUGG Assembly in Perugia in July 2007. No changes occurred in 2009. All International Commissions were active in 2009 with no changes in their officers. During the joint IAMAS-IAPSO-IACS-Assembly (MOCA-09) from 19-29 July in Montréal, Canada, the IAMAS Bureau and Executive Committee held three meetings in total and most of the Commissions had their regular business meetings as indicated below.

ACTIVITIES

Here a brief selection of activities is reported; the full compilation of commission reports will be posted on www.IAMAS.org/Reports.html.

IAMAS

The highlight of the year was the very successful event termed MOCA-09. Some two thirds of the nearly 1400 registered participants came from IAMAS. They contributed to 20 (of 21) joint symposia and to 18 IAMAS-only symposia. The general opinion prevailed that the overall organization by our Canadian hosts was excellent with a compact, but spacious venue and a carefully designed interlocking schedule comprising two well attended plenary sessions, up to 11 parallel sessions with IAMAS-contributions, and ample time for daily mid-afternoon discussion at posters. At the end of the opening ceremony Michèle BOURGEOIS-DOYLE (NRC), Pierre DUBREUIL (Env. Canada), and Jacques DEROME (McGill University) were presented with replicas of historic European seals as symbols of gratitude in the name of all three associations. A contract was the legal basis of our cooperation, but the personal dedication of the trio and their many Canadian colleagues was regarded as an essential backbone of the common success, in combination with the voluntary work of all convenors, who planned the symposia (see www.moca-09.org/e/documents/IAMAS2009Program15w.pdf for the entire 220-pp-programme-book).

On the eve of the last of 10 conference days some 35 Executive Committee members and guests dined together in the presence of no less than four (former) presidents of the Association.

President and SG took part at the IUGG Executive Meeting in Melbourne at the beginning of October and the initial planning for the IUGG-Assembly there in June/July 2011. On his way back the SG paid a visit to LASG, the president's base in Beijing, where he gave a seminar, met with past-president MacCRACKEN and was overwhelmed by the Chinese hospitality combined with a broad range of scientific activities. The SG and his deputy had two business meetings (January in Oberpfaffenhofen; October in Cambridge), *inter alia* dealing with plans for a face-lift of the website.

The SG joined a combined publication initiative by honorary members of IOC and IRC to highlight the catalyzing role of IAMAS commissions for advancing over decades international science programmes (cf. OHRING et al. 2009; <http://ams.allenpress.com/archive/1520-0477/90/11/pdf/i1520-0477-90-11-1669.pdf>; reprints with fully annotated group-photo can be requested from the SG).



On the photo from the left; seated: Brian HOSKINS [UK, 1991-95], Huw DAVIES [Switzerland, 1999-2003]; standing: Michael MacCRACKEN [USA, 2003-07], Guoxiong WU [China, 2007-11].

IAMAS-ICACGP

ICACGP members were actively involved in several symposia at MOCA-09. As a coming large event the 12th ICACGP Symposium is jointly planned with the 11th Science Conference of the International Global Atmosphere Chemistry (IGAC) Project to take place in Halifax, Canada, July 11-16, 2010 (cf. www.icacgp-igac-2010.ca), also supported by an IUGG-grant.

IAMAS-ICAE

At MOCA-09 two symposia were organized. Two editions of the detailed ICAE-newsletter appeared, which are available from the regularly updated web-site (cf. <http://icae.jp/>). The electronic mailing list was expanded to 650 entries.

IAMAS-ICCL

The regular business meeting was held during MOCA-09. ICCL members were active in co-convening and participating a number of symposia at MOCA-09. The Tasmania-based secretary acts as local IAMAS representative during the planning of IUGG-2011. The president joined several UNFCCC meetings in the run-up to COP-15 in Copenhagen (December) and the World Climate Conference 3 hosted by the WMO (August).

IAMAS-ICCP

An informal business meeting was held during MOCA-09. The ICCP sponsored a number of symposia at MOCA-09 with active participation of its members in each of them. The International Committee on Nucleation and Atmospheric Aerosols (ICNAA) within ICCP held its 18th international conference in Prague (Czech Republic; August; cf. www.icnaa.cz for general information, book of abstracts etc.). A book *Aerosol Pollution Impact on Precipitation: A Scientific Review* (386 pp., edited by Levin and Cotton) was published by Springer with numerous contributions from members of the cloud physics community. This scientific review was sponsored by the IUGG, IAMAS and the WMO and received the Atmospheric Science Librarians International (ASLI) 2009 choice as *Honorable Mention* for an authoritative, well-organized, forum-based approach to the evaluation of the problem.

IAMAS-ICDM

The regular business meeting took place during MOCA-09. Following the meeting, four new members were elected to the Commission: Craig BISHOP, Jianping LI, Olivia MARTIUS and David NOLAN. For MOCA-09 ICDM organized five symposia, co-convened two with other commissions and was involved in three joint symposia with the other associations. The next main international focus is the organization of symposia for IUGG-2011. A dedicated workshop on predictability, associated with the WMO-THORPEX programme and to take place in China, is being considered for 2012.

IAMAS-ICMA

Four symposia were sponsored during MOCA (M01 *Middle Atmosphere Science*; M02 *Climate Processes in the Upper Troposphere and Stratosphere*; M03 *The Impact of Solar Variability on Earth*; M05 *Stratosphere-Troposphere-Ocean Coupling in Climate - Top Down or Bottom Up?*)

The 9th Workshop on *Layered Phenomena in the Mesopause Region* was co-sponsored in Stockholm (Sweden; mid July). During the COSPAR assembly in Bremen (Germany, July 2010) ICMA will co-sponsor the *Solar-Terrestrial Physics Symposium* (STP-12).

IAMAS-IOC

Cooperative activities took place with WMO, including a *letter of agreement* for the establishment of an ad hoc expert team that will assess ozone absorption cross sections used in atmospheric observations, a *theme meeting* on ozone absorption cross-sections at WMO Headquarters in Geneva (Switzerland; May 2009). A book *Twenty years of ozone decline* (online under www.springerlink.com/content/tmv484/ , 472 pp., edited by Zerefos, Skalkos & Contopoulos) was published by Springer. It includes articles presented by leading scientists in ozone research at the Symposium for the 20th Anniversary of the Montreal Protocol, co-organized by IOC, UNEP, the Academy of Athens and the Mariolopoulos-Kanaginis Foundation in Athens (Greece; September 2007).

IAMAS-ICPAE

The regular business meeting took place during MOCA-09. Scientific break-throughs were identified in relation to data from recent space missions, to the planning and executions of which numerous commissions' members contributed. ICPAE members actively participated in events related with the *Year of Astronomy*. (Co-)Sponsorship was given to a number of symposia, e.g. at EGU in Vienna (Austria; April), AOGS (Singapore; August); EPSC in Potsdam (Germany; September). Two symposia were convened at MOCA-09. The natural link to COSPAR will be tightened during the *cospar-10* Assembly in Bremen (Germany; July 2010). For IUGG-2011 two symposia are being organized.

IAMAS-ICPM

Commission members led two joint-association symposia at MOCA-09. Contributions to the ICSU committee SCAR culminated in broad survey *Antarctic climate change and the environment* (526 pp., ISBN 978-0-948277-22-1, edited by Turner, Bindschadler et vii al.). In 2010, a workshop on *Antarctic Clouds* is being organized including support by an IUGG-grant. Two symposia are being co-convened at IUGG2011.

IAMAS-IRC

A workshop on *Clouds and Turbulence* was held in London (UK; May 2009), with support by an IUGG-grant. The regular business meeting of the commission took place during MOCA-09 including the election of two new members from China and Russia. The commission web-site was considerably updated (www.irc-iamas.org). The commission co-convened four symposia at MOCA-09. This active participation extends to *cospar-10* in Bremen (Germany; July 2010; the next business meeting will be held there) and IUGG-2011.

FUTURE ACTIVITIES

At MOCA-09, the Executive Committee accepted the bid from Switzerland to host the next large IAMAS event in 2013, to be jointly organized with IACS as a two-association assembly. Meanwhile the small Alpine town of Davos was selected as venue and 8-12 July 2013 as a compact 5-day-period for scientific presentations. Werner SCHMUTZ (vice-president of IAMAS-IRC) as well as Michael LEHNIG and Charles FIERZ (both IACS) all work at scientific institutes in Davos and will oversee the local organization.

Hans Volkert, IAMAS Secretary General



International Association for the Physical Sciences of the Oceans (IAPSO)

iapso.iugg.org

INTRODUCTION

IAPSO has the prime goal of “promoting the study of scientific problems relating to the oceans and the interactions taking place at the sea floor, coastal, and atmospheric boundaries insofar as such research is conducted by the use of mathematics, physics, and chemistry.”

IAPSO maintains formal liaison with other scientific commissions and committees. These include the ICSU's Scientific Committee on Oceanic Research (SCOR), and UNESCO's Intergovernmental Oceanographic Commission (IOC).

For more information see http://iapso.sweweb.net/_db/

ADMINISTRATION

The Secretary General met with the SsG of the associations and the SG of IUGG in Munich 20 May for a first planning of the IUGG General Assembly 2011.

During the MOCA-09 Joint Assembly in Montreal, 19-29 July, IAPSO held one General Business Meeting (GBM) and two Executive Committee meetings. (Minutes of the GBM are posted on the IAPSO website.) On the agendas were, for example, the visibility of IAPSO, how to establish the inclusion biogeochemistry in IAPSO, the relationship to the International Association for Biological Oceanography (IABO), and the connection with other (national) marine associations. The offer from Sweden to host and organize the 2013 Assembly in Gothenburg 22 – 26 July was discussed and has been approved by the IAPSO EC and the National Delegates in attendance at the GBM.

IAPSO Services, Commissions, and Working Groups report every second year. In particular, oral reports from the chairs of the three SCOR/IAPSO Working Groups 127 (Thermodynamics and equation of state of seawater), 129 (DOES) and 133 (OceanScope) were presented at the General Business Meeting during MOCA-09.

An updated pamphlet describing IAPSO has been prepared and was distributed widely at MOCA-09. General information about IAPSO can be found on website http://iapso.sweweb.net/_db

The President and the Secretary General participated in the IUGG EC meeting in Melbourne in October. After the IUGG meeting Lawrence Mysak gave the Priestley Lecture at Aspendale CSIRO on October 13. The President and the SG then went to Beijing to participate in the SCOR meeting the same month. A new SCOR/WCRP/IAPSO WG Climatic importance of the Greater Agulhas System was set up in Beijing.

ACTIVITIES

The main activity during 2009 was the MOCA-09 Joint Assembly in Montreal, July 2009 together with IAMAS and IACS. Some 1350 scientists from over 50 countries could choose among 53 symposia (sessions), consisting of 21 joint, 10 sponsored by IAPSO, 18 by IAMAS, and 5 by IACS. The theme of the conference was “Our Warming Planet”, but of course all high-quality presentations within the three associations' subject fields were welcome. The total number of presentations came close to 2000. The new

SCOR/IAPSO WG 133 OceanScope held the first meeting during three days before MOCA-09. Also the SCOR/IAPSO WG 129 Deep Ocean Exchanges with the Shelf (DOES) met during MOCA-09. In addition, DOES sponsored one symposium at MOCA-09. IAPSO provided some financial support both for the new working group OceanScope (via SCOR) and for the attendance of members of the DOES WG (provided directly from IUGG/IAPSO to two WG members).

During the Assembly IAPSO awards were presented and decided upon. Professor Harry L. Bryden FRS, University of Southampton, UK, was awarded the 2009 Prince Albert I Medal of IAPSO, "in recognition of his fundamental contributions to understanding the ocean's role in the global climate system." The ceremony was followed by the Prince Albert I Medal Memorial Lecture by the awardee, entitled "Monitoring the Variability in the Circulation of the North Atlantic Ocean". Dr. Bamol A. Sow of Senegal was selected to receive the 2009 Eugene LaFond Medal, which is awarded to an early career ocean scientist from a developing world country who presents an excellent paper on oceanography at an IAPSO or jointly sponsored IAPSO symposium. The title of his oral presentation at MOCA-09 was "Simulation of the Senegalese and Mauritanian Upwelling: How are the Winds actually Driving SST Variability and Water Mass Renewal?" He made his presentation at the DOES symposium mentioned above. Dr Sow was also invited to attend one of the WG meetings as a representative from developing countries.



Seawater measurements assist in understanding of periodic changes in the atmosphere and ocean of the tropical Pacific region, such as El Niño and La Niña

PLANNED FUTURE ACTIVITIES

2010 is a year in between assemblies. The main activity is thus related to the planning of the symposia to be held during the IUGG2011 General Assembly in Melbourne. Also the planning of the Assembly in Gothenburg, Sweden, July 2013, which will be arranged jointly with IAHS and IASPEI will take time during 2010.

The new SCOR/WCRP/IAPSO WG Climatic importance of the Greater Agulhas System will have the first meeting 20-21 February 2010, Portland, Oregon, USA, and the SCOR/IAPSO WG OceanScope will have a meeting 12-14 April in London, UK.

Winner of the Prince Albert I Medal 2011 will be elected after a call for nomination in June 2010.

Johan Rodhe, IAPSO Secretary General



International Association of Seismology & Physics of the Earth's Interior (IASPEI)

www.iaspei.org

INTRODUCTION

The International Association of Seismology and Physics of the Earth's Interior is the leading international association promoting the studies of the structure and of the geodynamical processes ongoing in our Earth's interior. IASPEI achieves its goals through scientific conferences, primarily those organized by IASPEI and its Commissions, but sponsoring also other international initiatives, fosters international cooperation, both in the monitoring seismic activity, research and education activities, especially in countries that are in the process of working towards full scientific development.

The main 2009 IASPEI activity was the January 2009 Scientific Assembly in Cape Town, South Africa. However, several important scientific meetings have been also sponsored by IASPEI.

ADMINISTRATION

EC & Bureau meetings

The Bureau and Executive Committee have met in Cape Town in January during the IASPEI Scientific Assembly.

Changes in administration

As an outcome of the Cape Town conference a few WG have been discontinued:

In the Commission on Seismological Observation and Interpretation, the Working Group on Reporting Seismic Phase Weights and Working Group on Default Depths.

Website

The IASPEI website has been updated continuously, mainly with the help of the IASPEI webmaster Alice Walker.

Newsletters

Also the IASPEI Newsletter in its new vest has been regularly sent to the IASPEI community. The Newsletters are also available for downloading from the website.

ACTIVITIES

The IASPEI Cape Town Scientific Assembly

The IASPEI Scientific Assembly was held in Cape Town, South Africa, 11-16 January 2009. The Assembly, held for the first time on the African continent, provided a very good platform for seismologists worldwide to meet and to discuss the latest developments in seismology and physics of the Earth's interior research.

There were 347 participants from 60 countries registered for the Assembly. Eighty three of them were students, young researchers and researchers from less-developed countries who were partially sponsored.



Plenary session at the IASPEI Scientific Assembly

Three Keynote lectures were delivered at the Assembly: Tom Jordan talked on “Earthquake Forecasting and Prediction: Progress in Model Development and Evaluation”; Raoul Madariaga discussed “Earthquake Dynamics: from source to radiation”; and Guust Nolet presented “Seismic tomography and the dilemma of the Earth’s heat budget”.

The 32 symposia of the programme covered the spectrum of research related to IASPEI Commissions and current “hot” topics in seismology, in a total of 335 oral and 106 poster presentations. These included, a session on “Capacity building and capturing undergraduate students to Geophysics/Seismology”, and two well-attended Panel discussions convened by R. Musson on: “Seismic Hazard: Living with Uncertainty” and “Earthquake Prediction: What the Future Holds”. Several IASPEI commission and working group meetings were organized during the Assembly.

The Assembly was conducted at the Cape Town International Convention Centre, which proved to be a perfect environment for delegates. The Local Organizing Committee, with the determinant support of the South-African Council for Geoscience, did a great job ensuring a smooth management and enjoyable social moments. Several pre- and post-conference fieldtrips were also organized.

A Summer school was organized in conjunction with the IASPEI Scientific Assembly and held during the week after the conference ended, attended by 27 fully sponsored, mostly African participants. Lecturers at the school were: Prof. Aldo Zollo, Prof. Yehuda Ben Zion, Dr. Martin Mai, Dr. John Douglas, Dr. Artur Cichowicz, and Prof. Colin Reeves.

The products of IASPEI Scientific Assembly in South Africa, including adopted resolutions, abstract volumes, keynote lectures, and useful meeting data are available at <http://www.iaspei.org/>

GEM project

The IAEE-IASPEI Joint Working Group on the International Alliance of Seismology and Earthquake Engineering Professional Associations activities were related to one of its missions: the GEM project, a global risk assessment initiative. P Suhadolc attended two meetings, in June at Hohenkammer (Munich) and in December in Paris.

International Scientific Studies conference

IASPEI participated with its President and Secretary General to the International Scientific Studies conference organized by the CTBTO in June in Vienna. P Suhadolc was one of the panelists.

Sponsored meetings

IASPEI has sponsored (on its own or an IUGG grant) the following workshops/symposia in 2009:

- Second International Seminar on Prediction of Earthquakes Prediction, Lisbon, Portugal, 29-30 April, 2009,
- International Symposium on Earthquake Seismology and Earthquake Predictability, Beijing, China, May, 2009, organized by the Seismological Society of China and the Institute of Geophysics, CEA,
- Workshop "From Core to Crust: Towards an Integrated Vision of Earth's Interior", July 20 – 24, 2009, Trieste, Italy, at the Abdus Salam International Center for Theoretical Physics,
- Advanced Workshop on Evaluating, Monitoring and Communicating Volcanic and Seismic Hazards in East Africa, August 17 - 28, 2009, Trieste, Italy, at the Abdus Salam International Center for Theoretical Physics,
- the international Geodynamics meeting at Suzdal, near Moscow, August 2009, with topics ranging from crustal dynamics to core convection,
- IRIS Seismological Workshop "Managing Waveform Data and Related Metadata for Seismic Networks", November 8-16, 2009, Cairo, Egypt,
- 11th International Workshop on Modeling of Mantle Convection and Lithospheric Dynamics held in Braunwald, Switzerland from June 28 to July 3, 2009.

Scientific Projects

The Seismoarchives (IDEA) project is going on. Willie Lee has continued to work hard on this project. IRIS is archiving the scanned seismograms.

PLANNED FUTURE ACTIVITIES

The 2010 AGU Joint Assembly in Brazil, Iguazu Falls, 08-13 August, is also supported by IASPEI taking an active role in the organization of the seismological sessions at the conference.

The European Seismological Commission will hold its General Assembly in Montpellier, France, on September 6-10, 2010.

The Asian Seismological Commission will hold its General Assembly in Hanoi, Vietnam, on November 8-10, 2010.

IASPEI has given its sponsorship to the Geophysics, Geodesy and Tectonics of the North Africa Plate Boundary for Better Earthquake and Tsunami Hazard Assessments conference too to be held in Algiers, Algeria on May 15-21, 2010 organized by ICTP.

Peter Suhadolc, IASPEI Secretary General & Treasurer



International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)

<http://www.IAVCEI.org>

INTRODUCTION

The International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI) represents the primary international focus for: (1) research in volcanology, (2) efforts to mitigate volcanic disasters, and (3) research into closely related disciplines, such as igneous geochemistry and petrology, geochronology, volcanogenic mineral deposits, and the physics of the generation and ascent of magmas in the upper mantle and crust.

Volcanology over the last 25 years has increased greatly its status as a fundamental discipline in the earth sciences. Its concerns reach from the deep roots of volcanic systems where magma is generated in the Earth's mantle, to the upper atmosphere which was formed originally- and is still being modified - by volcanic eruptions. Furthermore, only part of the scientific interests of IAVCEI centers on active volcanism. Much of the work undertaken to understand volcanic processes is carried out on dormant or extinct volcanoes and in ancient volcanic areas. The earliest crust-forming processes on Earth were volcanic, and large portions of Archaean terrains- the greenstone belts-are entirely volcanic. A small, but dedicated part of the scientific community also studies volcanic processes on the Earth's Moon and on planets such as Mars and Venus.

IAVCEI is run by the Executive Committee, whose membership changes every four years. The Executive Committee determines policies for the Association, enacting them through a series of Commissions and Task Groups. IAVCEI aims to be outward-looking, seeks relationships with other international scientific organisations, and participates in international scientific projects. It aims also to maintain a robust publishing policy, encouraging the presentation of high calibre, volcanological research results, mainly through its premier international journal the Bulletin of Volcanology.

ADMINISTRATION

IAVCEI Executive Committee activities

IAVCEI Executive Committee activities during 2009 have all been carried out through email exchange among the EC members. These include:

- Revision of IAVCEI Finances, funding support, and potential funding sources and strategies. The control of IAVCEI finances is now clear and all funds have been transferred to a unique official account in Barcelona (Spain) and the rest of accounts have been closed.
- The revision of the existing commissions, past activities and future plans is still ongoing and we expect to make a decision on which Commissions will continue and which ones will be cancelled during the first half of 2010.
- The website has been revised and updated. It now includes new sections.
- A contract has been signed with Volcano Video Productions (USA) and NHK International (Japan) companies in order to transform the IAVCEI videos (Reducing Volcanic Risk and Understanding Volcanic Hazards) into DVDs.

- A proposal for the IAVCEI scientific program for IUGG GA 2011 has been elaborated in collaboration with Prof. Ray Cas, Local Chairman and member of IAVCEI.
- Negotiations with Elsevier addressed to incorporate the Journal of Volcanology and Geothermal Research as an official Journal of IAVCEI in conjunction with Bulletin of Volcanology (Springer) have been initiated by the SG.
- The President and the SG participated in the IUGG EC meeting held in Melbourne (Australia) in September where the organization and scientific program for IUGG 2011 were discussed.

IAVCEI Research Grants

As result of an agreement reached by the EC in 2008, a public call for proposals was opened in August and left open till the 1st of October in order to receive proposals on research projects addressing topics closely related to the main objectives of IAVCEI. A process of review, evaluation and selection of the best proposals has been conducted since then among the EC members. As a result of this review process, we have selected two proposals to be partially funded by IAVCEI with a maximum of 20000 € each. The outcome of this evaluation has been published in the website and also in the second newsletter of 2009.

Members

In 2009, the number of IAVCEI paid individual members was 725, 68 of them being Life Members.

ACTIVITIES

Newsletters

One issue of the newsletter "IAVCEI News" has been published through the website in June 2008 and a second one has been published in January 2010.

2009 Meetings, workshops and courses

The following meetings, workshops, and courses have been organized by one (or more) of the IAVCEI commissions in 2009:

- Colima International meeting, Mexico, February 2009,
- Volcanic Gases Commission meeting, Mexico, March 2009, (Commission on Volcanic Gases),
- 3rd Maar Conference, Argentina, April 2009, (Commission on Explosive Volcanism),
- ICTP Evaluating, Monitoring and Communicating Volcanic and Seismic Hazard in East Africa, Trieste, Italy, August 2009, sponsored by IAVCEI/IASPEI Commission on Volcano-Seismology,
- Jorullo International meeting, Mexico, September 2009
- Advances in studies of volcanic plumes and pyroclastic density currents, Clermont Ferrand, France, October 2009, (Commission on Explosive Volcanism),
- 17th International Field Course of Central Andes, Argentina, November 2009, (Commission on Caldera Volcanism).

PLANNED FUTURE ACTIVITIES

Executive Committee activities for 2010

Foreseen activities for 2010 include:

- Reorganization of the Editorial Board of Bulletin of Volcanology.
- Completion of the revision of the IAVCEI Statutes and By Laws.
- Finalization of the IAVCEI Scientific Program for IUGG 2011.
- Completion of the reorganization of IAVCEI Commissions.

Meetings, workshops and courses in 2010

Forthcoming meetings, workshops and courses in 2010 are:

- 7th Workshop on Volcanic Lakes, Costa Rica, 17-21 March 2010, (Commission on Volcanic Lakes),
- Cities on Volcanoes 6, Tenerife, Spain, June 2010, (Commission on Cities on Volcanoes),
- Course/workshop "Research and hazard mitigation perspectives for the active Nisyros volcanic island", Nisyros, Greece, June 2010, (Commission on Explosive Volcanism, in combination with the CoV6),
- State of the Arc (SOTA) 2010, Santorini, Greece, 19-25 September 2010, (Commission on Arc Magmatism),
- III International workshop on Caldera Volcanism, La Reunion, France, October 2009, (Commission on Caldera Volcanism).

Joan Martí, IAVCEI Secretary General

ACTIVITIES OF THE UNION COMMISSIONS AND INTER-ASSOCIATIONS WORKING GROUPS

The following reports illustrate the impressive range of activities within each Union Commission as well as their dedication to supporting science within developing countries. Each Union Commission has a web site where much more information can be found.

Commission for Data and Information (UCDI)

www.iugg-ucdi.org

INTRODUCTION

In 2008 the IUGG established the Union Commission on Data and Information (hereafter UCDI) to provide IUGGs eight Associations an entity to deal with data and information issues at the Union level and engage with similar bodies in other Unions and Societies.

The Commission provides a focused and sustainable organizational structure that supports and strengthens IUGG science through integrated scientific information activities in order to ensure the availability of modern data and information systems and services. These services are globally distributed, provide universal open access, and must be sustainable. The UCDI objectives are to:

- provide a focus and single voice within IUGG, spanning all IUGG Associations and inter-Association bodies.
- connect IUGG and its scientists to other bodies/agencies/initiatives that have interest and responsibility on matters of geo-data.
- advocate and facilitate research and development in the growing field of informatics to improve data and information systems and practices.
- promote open access to data and adoption of inter- operable data sets.

ADMINISTRATION

Membership - UCDI executive

IACS	Mark Parsons, NSIDC, IPYDIS (USA)	parsonsm@nsidc.org
IAG	Bernd Richter (Germany)	richter@iers.org
ICSU-FAGS	Ruth Neilan JPL (USA)	Ruth.Neilan@jpl.nasa.gov
IAGA	Peter Fox, RPI (USA) - CHAIR	pfox@cs.rpi.edu
IAHS	Pierrick Givone (France)	pierrick.givone@cemagref.fr
IAMAS	Maria Assunção F. Silva Dias, CPTEC/INPE (Brazil) (IAMAS Vice-Pres.)	assuncao@cptec.inpe.br
IAPSO	W John Gould, Southhampton, UK	wjg@noc.soton.ac.uk
IASPEI	Tim Ahern, IRIS, (USA)	tim@iris.washington.edu
IAVCEI	Adelina Geyer Traver, Barcelona (Spain) - SECRETARY	ageyer@ija.csic.es
eGY & CODATA	Charles Barton, Australian National University, (Australia) - VICE CHAIR	cebarton@gmail.com

Business meetings

- Active email exchange
- Chair and secretary met at EGU 2009 for schedule review, web site review

ACTIVITIES

Terms of Reference

The final terms of reference of the commission were approved in 2009 after modification of one item:

Removal of intent for UCDI to transition to an Association. The reasoning was that to fully serve IUGG, all association should participate and the formation of a new association was likely to inhibit that.

The IUGG EC also recommended two changes that were made in the final ToR:

1. Two items should be added to the current ToR (see attached), namely,
 - UCDI shall be reviewed by the Executive Committee of IUGG every 4 years.
 - UCDI terminates its activities by the decision of the IUGG Executive Committee.
2. Section "Work breakdown structure and schedule" of ToR should be revised in the part of "Near-term (by mid-2009)". The concern, for example, was that no UCDI web page exists yet, while the commission is set up more than one year ago.

Scientific Meetings

The commission via its executive continued and expanded participation at meetings including Spring and Fall AGU (Fox, Parsons, Ahern, Neilan), eGYoutcomes (Barton, Parsons), EGU (Fox, Geyer Traver)

The UCDI executive prepared and submitted a proposal for a Union Session at the IUGG 2011 General Assembly entitled: „Data science/informatics and data assimilation in geophysical models (climate, oceanography, hydrology, solid Earth).“

Projects

Project – define scope:

- Data science: Earth and space (geo)- informatics.
- Distributed data systems: virtual observatories, libraries, research communities and organizations.
- Open access to data and information.
- All issues related with data acquisition, processing, storing, manipulation, interpretation and use.

Community support

Letters of support

- Prepared, in consultation with Eigil Friis-Christensen a draft memo on “The matter of the transfer of responsibility for Danish magnetic observatories from the Danish Meteorological Institute.”
- Prepared, in consultation with the UCDI executive, a letter of support entitled “The necessity for community-based e-Science infrastructure and sustained support: the example of the Grid in Europe“, to the IUGG secretary general, for an EU proposal

Participation and representation

UCDI’s near-term plans and progress were:

- Establish initial Commission website presence (www.iugg-ucdi.org) reserved and web hosting secured, initial web context due in April 2009, verification of commission web page on IUGG web site)
- Collect, compare, adapt and recommend policies and procedures for collaboration on data collection, and use and sharing across IUGG Association activities (Barton, Parsons, ongoing).

- Contribute to the deliberations about the future of the World Data Centre System as it relates to IUGG Association science areas (Now World Data System Services. Fox, Ismail-Zadeh to contribute to March 2009 meeting).
- Contribute to the deliberations about the future of the Federation of Astronomical and Geophysical Data Analysis Services (now included in the above item).
- Seek members from within and beyond IUGG's Associations (to commence in 2009).

Representation:

- Peter Fox and Bernd Richter represent UCDI and IUGG on the new ICSU Strategic Coordinating Committee on Information and Data (SCCID) which met in Paris, in October 2009.
- Ruth Neilan represents UCDI and IUGG on the World Data System Transition Team which met several times in 2009.
- Mark Parsons represents UCDI and IUGG on the Polar Information Commons effort funded by ICSU and CODATA
- Liaisons for scientific societies:

Liaise with related data and information bodies and forums to advance the shared responsibilities for modern data and information practices – identify commission representatives to those bodies' and forums.

- AGU (Peter Fox – chair and program committee)
- EGU (Peter Fox – program committee, Adelina Geyer Traver)
- GSA - pending
- JGPS – pending

PLANNED FUTURE ACTIVITIES

- Continue ongoing near-term activities from above.
- Continue membership outreach, especially for participants in activities.
- Liaise with related data and information bodies and forums to advance the shared responsibilities for modern data and information practices – identify commission representatives to those bodies' and forums.
- Arrange informatics and collaborative sessions at Assemblies and major conferences of IUGG and at other Geo-union activities.
- Arrange workshops and training in support of IUGG's mission related to data and information.
- Outreach to increase awareness – encourage Commission members to include discussions on the Commissions activities in talks, lectures at any suitable venue.
- Ensure the themes of the Commission are publicized in publications – via articles in journals and newsletters, and potentially the development of promotional literature.
- Maintain an active and evolving website presence.
- Issue an (at least yearly) Electronic Newsletter.

Peter Fox, UCDI Chair

Commission on Geophysical Risk and Sustainability (GRC)

<http://www.iugg-georisk.org/>

INTRODUCTION

The IUGG Commission on Geophysical Risk and Sustainability (IUGG GeoRisk Commission) established by the IUGG Bureau in August 2000 is dedicated (i) to promoting scientific studies applied to the reduction of risk from natural hazards in an increasingly urbanized world and sustainability and (ii) to reducing death and destruction from natural and technological hazards by providing hazards data and information to emergency managers, policy-makers, scientists and the general public in the most timely and effective manner as possible. This includes the integration of knowledge concerning environmental, social and economic processes. The fundamental scope of this Commission is to facilitate communications – between scientists via meetings, workshops and publications, as well as between scientists and decision makers, between scientists and the public, and between scientists and schools.

ADMINISTRATION

An informal business meeting of GRC was held on 12th January 2009 in Cape Town on the occasion of the IASPEI General Assembly. The minutes of this meeting in full are shown under “Meetings and Reports”. On the occasion of the IYPE Meeting of Science Implementation held in Pretoria, South Africa, on 18-19 May 2009 the IUGG hazard projects for Africa were discussed, continuing the GRC-decisions of the Oslo meeting (10 August 2008; see also “Meetings and Reports”). The same applies to a project meeting on 04th March in Leipzig, Germany, between the projects leaders of the IUGG African hydrometeorological hazards (see IUGG Electronic Journal Vo. 9 No 5). A major activity of GRC was to prepare a formal application for a grant allowing to develop and hold a Union Symposium “Grand Challenges in Natural Hazards Research and Risk Analysis” and an open forum “Natural Hazards: From Risk to Opportunity by Partnership of Science and Society”, what succeeded towards the end of the year 2009 thanks to the efforts of Kuniyoshi Takeuchi and Alik Ismail-Zadeh, with many other commissioners contributing. The terms of reference of GRC were formulated and after some fruitful discussion finalized. The joint projects with the ICSU Regional Office for Africa were pursued with some organizational reshaping. The homepage of the commission was updated.

ACTIVITIES

The year 2009 was a year of many disasters. Despite the fact that the extent of the adverse effects of the natural disasters did not reach the level of the years before, the overall situation was bad enough. Most of the disasters were triggered by floods and storms, most of the fatalities caused by earthquakes and tsunamis. Particularly often the Asian countries were affected, and there it were the poorer parts of the population that were hit particularly hard. For GRC that means to extend its activities into integrative approaches to better support disaster prevention measures with scientific methods and results.

Scientific meetings

GRC-members participated actively in many scientific conferences and meetings all related to GRC topics. The following list does represent a selection of these activities. Sessions or conferences were organized by

- Vladimir Kossobokoy “The Year of the Planet Earth –Second International Seminar on Prediction of Earthquakes, Lisbon, Portugal, 29-30 April 2009; Electronic Geophysical Year : State of the Art and Results, Pereslavl-Zalessky, Russia, 3-6 June 2009;
- Gerd Tetzlaff “Risk and Planet Earth”, celebrating the 600th anniversary of the University Leipzig, Leipzig Germany, 3-5 March 2009.

The number of memberships and participations in scientific and management meetings was numerous and multifold, according to the cross cutting nature of georisk research. Each one of the commissioners actively

contributed to several organizations, meetings, workshops and conferences, both in more national and in international events. The individual contributions are best found via the individual members of GRC. Outstanding activities were connected to the Regional Offices of ICSU, namely ROAP and ROA.

Publications

The GRC commissioners actively published or edited scientific articles and papers and presented invited talks:

- Gerd Tetzlaff co-edited a volume on “Addressing the Challenge” Second Global Platform Meeting in Geneva, Switzerland, 25th June 2009, DKKV-Volume 38, 60p.).
- Tom Beer edited “IYPE Book Series”, Springer;
- Harsh Gupta co-edited “The devastating Muzaffarabad earthquake of 8th October 2005 of western Himalaya”, Journal of Seismology.
- Harsh Gupta published “Is northern Bay of Bengal Tsunamigenetic?” in the Bulletin of seismological Society of America, and “Cooperation plan on hazards and disasters risk reduction in Asia and the Pacific”, IYPE Book Series, Springer.
- Kuniyoshi Takeuchi and Gerd Tetzlaff acted on the scientific board of the Spring School on Fluid Mechanics and Environmental Hazards, Singapore, 19 April to 2 May 2009.
- Jayawardena and Gerd Tetzlaff lectured and also supplied student projects.
- Harsh Gupta gave an invited talk “Natural and Human Induced Environmental Hazards and Disasters”, 20th April 2009.
- Alik Ismail-Zadeh gave invited talk “Modeling of Extreme Seismic Events and Possibilities for Accurate Earthquake Prediction” at the International Conference on StatSeismology, Lake Tahoe, California and “Extreme seismic events: From modeling and prediction to preventive disaster management” at the AGU Joint Meeting in Toronto, Canada.

Participations, representations and networking

There were many contacts between GRC commissioners and national and international organizations. The contact to UNISDR is secured by Harsh Gupta, who is a member of the science committee. The contact to UNISDR Europe is kept by Gerd Tetzlaff. Tom Beer was actively involved in the international coordination IYPE activities. He reported on the hazard theme on the occasion of the Pretoria, South Africa, meeting 18-19 May 2009 (see “Meetings and Reports”). Gerd Tetzlaff is a focal point in the Nairobi Work Program Process of the UN Climate Change Secretariat (UNFCCC) contributing to the Cuba workshop March 2009 and the Bonn Climate talks in June and August 2009 preparing the Conference of the Parties, COP 15, in Copenhagen.

A. Jayawardena gave an invited talk “Cooperative Actions for Disaster Reduction”, ISDR- UNU, organized by International Association for Wind Engineering, Tokyo, Japan, 4-6 March 2009.

G. Tetzlaff, GRC Secretary General

Commission on Mathematical Geophysics (CMG)

<http://cmg2010.pi.ingv.it/>

INTRODUCTION

The Committee on Mathematical Geophysics is a Union Commission. Its aims to encourage exchange of ideas and information in all areas of geophysics, with emphasis on the application of mathematics, statistics and computer science to geophysical problems, and to promote the development and application of mathematical methods and appropriate theoretical techniques for the solution of problems across the complete spectrum of geophysical disciplines. The Committee is sponsored by all IUGG Associations. The earliest incarnation of the present CMG Committee was as the Working Group on Geophysical Theory and Computers (WGGTC), which was founded by Vladimir Keilis-Borok. The first meeting of the WGGTC was held in Moscow and Leningrad in 1964 and the last in Moscow in 1971 with intervening meetings held once yearly. Subsequent to 1971 the group was re-structured as the present Committee on Mathematical Geophysics, which has met on a semi-annual basis since that time, beginning with a meeting in Banff (Canada) in 1972.

The schedule since 1986 has included the following sequence of major CMG sponsored conferences: Oosterbeek (The Netherlands, 1986), Blanes (Spain, 1988), Jerusalem (Israel, 1990), Taxco (Mexico, 1992), Villefranche (France, 1994), Santa Fe (USA, 1996), Cambridge (UK, 1998), Villefranche sur Mer (France, 2000), Torino (Italy, 2002), New York (USA, 2004), Sea of Galilee (Israel, 2006), Longyearbyen (Norway, 2008). The next Conference on Mathematical Geophysics will be held in 2010 in Pisa, Italy.

ADMINISTRATION

The following are current officers of the Union Commission on Mathematical Geophysics:

Chair: Daniel Rothman (USA)
Vice-Chair: Einat Aharonov (ISRAEL)
Secretary: Claudia Pasquero (USA)

The following are representatives to the CMG from member associations:

Peiliang Xu (IAG representative)
Matthias Holschneider (IAGA representative)
Daniel Schertzer (IAHS representative)
Dick Peltier (IAMAS representative)
Gordon Swaters (IAPSO representative)
Yehuda Ben-Zion (IASPEI representative)
Augusto Neri (IAVCEI representative)

The most recent business meeting was held on June 17th, 2008 in Longyearbyen, Norway, during the semi-annual Conference on Mathematical Geophysics. Among the participants, CMG officers (Dan Rothman, MIT, Cambridge, USA; Einat Aharonov, Weizmann Institute, Israel), representatives from the Associations (Dick Peltier, Univ. of Toronto, Canada; Yehuda Ben Zion, University of Southern California, Los Angeles, USA), and the IUGG Secretary General Alik Ismail-Zadeh (University of Karlsruhe, Germany). At the meeting, the candidacies for the location of the next Conference, to be held in 2010, were discussed. In particular, an articulated candidacy was presented by representatives of the Italian Institute of Geophysics and Vulcanology, Pisa, Italy, that was unanimously and enthusiastically chosen. The local organizing committee is chaired by Augusto Neri, IAVCEI representative at CMG.

ACTIVITIES

The principal activity of the CMG is to sponsor a biennial conference on theoretical geophysics.

The 28th International Conference on Mathematical Geophysics will be held from 7 to 11 June 2010 in Pisa, Italy. The theme for the meeting is “Modelling Earth Dynamics: Complexity, Uncertainty and Validation.”

Special sessions at the meeting will include:

- Geophysical fluid dynamics I - Volcanoes
- Geophysical fluid dynamics II - Sub-surface and surface flows
- Geophysical fluid dynamics III - Atmosphere and ocean
- Brittle deformation and computational seismology
- Geodynamics and geomagnetism
- Environmental systems and climate
- Quantifying the uncertainty in Earth systems
- Data assimilation and model validation
- Computational geophysics: modern algorithms and applications
- Can our models only predict the irrelevant? (in memory of A. Tarantola).

The following are members of the local organizing committee:

Augusto Neri (INGV Pisa, Chair)

Enzo Boschi (INGV President)

Sara Barsotti (INGV Pisa)

Mattia de' Michieli Vitturi (INGV Pisa)

Antonella Longo (INGV Pisa)

Tomaso Esposti Ongaro (INGV Pisa)

Franco Flandoli (Universit di Pisa)

Paolo Papale (INGV Pisa)

Mauro Rosi (Universit di Pisa)

Gilberto Saccorotti (INGV Pisa)

Maria Vittoria Salvetti (Universit di Pisa)

A limited number of grants will be available to students and participants with restricted funding. Financial assistance may include reimbursement of the registration fee and/or support for accommodation and travel expenditures. Recipients will be reimbursed after the conference. Further information can be found at the conference website: <http://cmg2010.pi.ingv.it/>.

Daniel Rothman, CMG Chair

Commission on the Study of the Earth's Deep Interior (SEDI)

<http://www.sedigroup.org>

INTRODUCTION

SEDI is an international scientific organization dedicated to the Study of the Earth's Deep Interior. The scope of SEDI includes the core and lower mantle, but interest may extend to the surface, for example, in the study of mantle plumes or dynamics of descending lithospheric slabs. The scientific questions and problems of interest to SEDI include: 1) the investigation of the origin, evolution, structure, geochemical and mineralogical composition of the inner core, outer core, mantle and crust (on a planetary scale), 2) the investigation of core magnetohydrodynamics at all time scales, both from a theoretical point of view (dynamo theory, magnetohydrodynamic waves) and from an observational point of view (as provided by modern, historical, archeomagnetic and paleomagnetic data), and of more general fluid rotational dynamics that can affect the core (such as precessional effects and short time scale instabilities), 3) the investigation of mantle dynamics, both from a theoretical point of view (solid state convection in the presence of complex rheology and phase transitions, role of plumes and descending slabs) and observational point of view (global 3D reconstruction of mantle convection from surface, seismological, geochemical and geodetic observations), 4) the investigation of mechanical, electromagnetic, thermal and chemical interactions between the inner-core, core, mantle, crust and possibly outer layers on a planetary scale, particularly in view of a global understanding of the Earth as a globally interacting system, with special emphasis on investigation of interfaces (nature, shape, role), 5) The thermodynamics of the Earth and the investigation of its long-term thermal evolution.

Since 1987, SEDI has been a Union Committee of the International Union of Geodesy and Geophysics ([IUGG](#)). As such, it cuts across the traditional discipline-oriented bounds of the Associations of the IUGG [such as the International Association of Geodesy ([IAG](#)), the International Association of Geomagnetism and Aeronomy ([IAGA](#)), the International Association of Seismology and Physics of the Earth's Interior ([IASPEI](#)), and the International Association of Volcanology and Chemistry of the Earth's Interior ([IAVCEI](#))] which normally study the Earth from a particular point of view. The intent of SEDI is to amalgamate all sources of data and all points of view to generate the most coherent and consistent picture of the workings of the Earth's deep interior.

ADMINISTRATION

SEDI is currently chaired by Gauthier Hulot (IPGP, France), vice-chaired by Satoru Tanaka (JAMSTEC, Japan), with Michael Bergman (Simon's Rock College, USA) acting as Secretary General. SEDI has a membership of about 550, as recorded on the email list used to broadcast information related to SEDI activities.

ACTIVITIES

SEDI's main activity is the organization of a dedicated workshop every even year. The previous (11th) SEDI workshop took place 27-31 July, 2008 in Kunming, Yunnan Province, China. As is the tradition, one special issue of Physics of the Earth and Planetary Interior entitled "2008 IUGG SEDI Symposium" (Vol. 178, Iss. 1-2, P. 1-100, January 2010) has recently been published as an outcome of the 2008 11th SEDI meeting. This can be accessed through the link <http://www.sciencedirect.com/science/journal/00319201>.

On odd years, such as this past year, no SEDI workshops are held, but many SEDI-related sessions are encouraged and co-sponsored, particularly during SEDI-related IUGG association meetings. This year has been no exception. Several scientific sessions at American Geophysical Union meetings have also been co-sponsored (Five at the May 2009 joint AGU/Meeting of the Americas meeting, and nine at the Fall AGU meeting).

Finally, one very successful workshop on “Geodynamical Phenomena: From Field, Observational, Computational, Seismological and Rheological Perspectives” (18-23 August, 2009) was endorsed by SEDI and organized with IUGG support, by Alexander Gliko (IFZ, Institute of Physics of the Earth, Chair of the LOC) and David Yuen (University of Minnesota, USA, Chair of the International Committee), in Suzdal, Russia. It attracted 71 participants with a foreign participation of around 32, which included representatives from U.S.A., China, Japan, Australia, Belarus, Germany, Switzerland, Taiwan, Israel, Ukraine, France, Denmark, Norway and Sweden (see <http://marina.geo.umn.edu/suzdal>).

In addition, SEDI has continued to serve the scientific community as a means of distributing information about upcoming meetings, funding opportunities, and academic openings.

The next (12th) SEDI workshop is to be held in UCSB, California, USA, 19-23 July, 2010, overlapping with a 7-week CIDER (Cooperative Institute of Deep Earth Research, <http://www.deep-earth.org/workshop09.html>) program sponsored by NSF/CSEDI. The preparation of this meeting is actively ongoing under the responsibility of the Local Organizing Committee including Barbara Romanowicz (UC Berkeley, Chair), Ralph Archuleta (UCSB), Jonathon Aurnou (UCLA), Bruce Buffett (UC Berkeley), Louise Kellogg (UC Davis), Guy Masters (UCSD) and Toshiro Tanimoto (UCSB). Additional oversight is provided by an International Program Committee, which includes Francis Albarède, Ecole Normale Supérieure, Lyon, France), Gauthier Hulot (IPGP, France), Ian Jackson (ANU, Australia), Sidao Ni (USTC), Eiji Ohtani (Tohoku U., Japan), Tilman Spohn (DLR, Germany), Paul Tackley (ETH Zurich, Switzerland), Satoru Tanaka (Jamstec, Japan), and Keke Zhang (U. Exeter, UK). A website has been set up and is accessible through the SEDI homepage <http://www.sedigroup.org/>.

PLANNED FUTURE ACTIVITIES

SEDI is also taking part to the organization of the 2011 IUGG General Assembly, to be held in Melbourne, Australia (27 June to 8 July 2011). In particular, a Union Session is planned to be held, co-convened by Michael Bergman (Simon’s Rock College, USA), Gauthier Hulot (IPGP, France), and Satoru Tanaka (JAMSTEC, Japan).

Michael Bergman, SEDI Secretary General

Inter-Associations (IAGA/IASPEI/IAVCEI) Working Group of Electromagnetic Studies on Earthquakes and Volcanoes (EMSEV)

<http://www.emsev-iugg.org/emsev/>

INTRODUCTION

The Inter-Association Working Group of Electromagnetic Studies on Earthquakes and Volcanoes (EMSEV) focuses on the physics and the monitoring of electromagnetic (EM) effects of earthquakes and volcanic eruptions. The main objectives are:

- To promote magnetic and electric studies of earthquakes, tsunamis and volcanoes from the source to the ionosphere, through national and international collaborations,
- To integrate multi-disciplinary techniques in order to better analyze the physical mechanisms,
- To organize international and regional meetings, and to disseminate relevant data and research results,
- To contribute to develop EM studies in developing countries and to assist to develop integrated EM monitoring systems and data analyses.

Founded in 2001 by IUGG, the Inter-Association Working Group of Electromagnetic Studies on Earthquakes and Volcanoes is supported by IAGA, IASPEI and IAVCEI associations. As a matter of fact, the understanding of earthquakes processes and volcanic eruptions, and the ability to detect and analyze EM signals related to active tectonic processes require expertise in many fields of researches: physics of the Earth, physics of fault rupture and volcanic eruptions, laboratory experiments, physical mechanisms generating magnetic, electric and electromagnetic signals, role of fluids, gas and thermal fluxes in the crust, propagation of EM signals in the crust and towards the ionosphere.

One of EMSEV's primary objectives is to keep a good balance between all these domains of research. The EMSEV WG strongly promotes the highest quality researches in advanced countries (Japan, France, USA, Greece, Italy, China), organizes sessions and meetings at international level, endorses outstanding observations and results, and expands EM activities in developing countries as well.

ADMINISTRATION

Membership

EMSEV is composed of an elected executive bureau, a nominated assembly of members, and the community interested in electromagnetic phenomena, called corresponding members.

The bureau is animated by a Chairperson (J. Zlotnicki) with the contribution of a Vice-Chairperson (M.J.S. Johnston), the past Chairperson (S. Uyeda), a Secretary (T. Nagao), liaison members from IAGA (T. Liu), IAVCEI (K. Hattori) and IASEPI (M.J.S. Johnston), and a corresponding liaison member from IAGA WG1-2 (T. Harinarayana).

The WG members are nominated for their expertise in the EM field, and scientific activity. They are nominated during EMSEV business meetings. A good balance between countries involved or interested in EM phenomena is looked for. The number of WG members is 40.

The corresponding members are now more than 250.

At least one business meeting is held every year during general assemblies (IUGG, IAGA, IAVCEI, and IASPEI). EMSEV also organizes business meetings during local and regional conferences in order to inform locally on EMSEV activities (EMSEV meetings (2008, 2010), EMSEV-PHIVOLCS 2010 workshop).

All the minutes of the business meetings and annual reports can be found on EMSEV web site.

ACTIVITIES

EMSEV has maintained a high level of activity during 2009, promoting outstanding studies on magnetic and electric studies of earthquakes and volcanoes. An increasing number of new areas of research have resulted from new national and international cooperation's, and mixing of different expertise has contributed to better understanding of EM and other related phenomena. The scientific communities dealing with ionospheric EM signals and lithospheric EM signals are now working together and new ideas emerge in the interpretation of EM signals from the source to the ionosphere.

EMSEV also continues to strongly support activities in developing countries by introducing EM techniques, organizing regional workshops, and teaching young scientists.

Finally, EMSEV is extremely active in organizing specific sessions in regional and international meetings. During 2009, the EMSEV working group was involved in seven major international meetings:

- EGU, Vienna, Austria, 19-24 April, 2009
- 2009 International Workshop on Validation of Earthquake Precursors by Satellite, Terrestrial and other Observations (VESTO). Case studies of the recent Asian events, Chiba University, and Japan March 26-28, 2009,
- Second International Seminar on Prediction of Earthquakes, Lisbon, Portugal, 29-30 April, 2009,
- International Conference "Electronic Geophysical Year: State of the Art and Results", Pereslavl-Zalessky, Russia, 3-6 June 2009,
- AOGS 2009 meeting, Singapore, 11-15 August, 2009
- XIth IAGA 2009 meeting, Sopron, Hungary, 23-30 August, 2009,
- AGU 2008 Fall meeting, San Francisco, 14-18 December 2009.

EMSEV is also active in developing countries as on Taal volcano in the Philippines. The Philippines is a highly populated developing country that faces serious Natural Hazards from Volcanic Eruptions and Earthquakes. Risk assessment is a key issue for Civil Authorities and Official Institutions (such as the Philippines Institute of Volcanology and Seismology - PHILVOCS) responsible for delivering reliable information on volcanic unrest and potential earthquakes. The common objective of PHIVOLCS and EMSEV is to develop a new scientific community of both young and experienced Philippine scientists. Priority was given to Taal volcano which has exhibited signs of unrest since 1992.

Since 2005, an international Japan-French EMSEV team has visited Taal about twice a year with a PHIVOLCS EM team with the objectives to understand the structure, the dynamism and the heat and fluid transfers, as well as to monitor the volcano activity.

Thanks to an IUGG grant, an International and regional workshop will be held in Manila in February 2010 on: MONITORING ACTIVE VOLCANOES BY ELECTROMAGNETIC AND OTHER GEOPHYSICAL METHODS: Application to Asian Volcanoes.

This second workshop will highlight techniques and methodologies for monitoring active volcanoes. Topics will focus on advanced multi-methodological methods based on electromagnetic and other geophysical methods for understanding volcanic structures and monitoring awaking volcanoes and hydrothermal/magmatic unrests.

PLANNED FUTURE ACTIVITIES/ ANNOUNCEMENTS

As in the past years, EMSEV will be involved in many international meetings:

- PHILVOLCS-EMSEV meeting 2010,
- EGU meeting, Vienna, Austria, May 2-5, 2010
- Cities on Volcanoes, CoV6-Tenerife 2010, Tenerife, Canary Islands, Spain, May 31 – June 4, 2010,
- 2010 Western Pacific Geophysics Meeting, Taiwan, June 2010,
- Second International Symposium on Radio Systems and Space Plasma, Sofia, Bulgaria, August 25-27, 2010,

- 20th electromagnetic induction workshop, Egypt, 15-28 September, 2010,
- EMSEV 2010 meeting, Chapman University, Santa Ana, USA, October 3-6, 2010,
- AGU Fall Meeting, San Francisco, December 2010.

EMSEV will continue its efforts in developing EM studies and monitoring on Taal volcano in cooperation with PHIVOLCS. Two field campaigns are already scheduled: March and October-November 2010.

Jacques Zlotnicki, EMSEV President



The Inter-Unions Commission

International Lithosphere Program (ILP)

<http://sclilp.gfz-potsdam.de>

INTRODUCTION

The International Lithosphere Program (ILP) seeks to elucidate the nature, dynamics, origin and evolution of the lithosphere through international, multidisciplinary geoscience research projects and coordinating committees.

The ILP is charged with promoting multidisciplinary research projects of interest to both the geological (IUGS) and geophysical (IUGG) communities.

The ILP seeks to achieve a fine balance between: “*addressing societal needs*”, e.g. understanding natural catastrophes and other solid earth processes that affect the biosphere, providing information for improved resource exploration and environmental protection; and “*satisfying scientific curiosity*”.

According to the Terms of Reference published in 2008, ILP is a body of IUGG and IUGS.

ADMINISTRATION

ILP has a team of around 7 Bureau members from several countries that meet annually to monitor progress and to approve new programmes and activities together with the team of representatives of National Committees. The team is led by the President, the Secretary General and the leader of the national committees.

The Bureau was restructured during the Bureau meeting in Vienna on 20 April 2009. As new chair person for the National Committees, Dr. Victoria L. Pease was elected.

Bureau membership

Executive Members:

President:	S. Cloetingh	The Netherlands
Secretary General:	R. Oberhänsli	Germany
with Executive Secretary:	A. Rudloff	Germany
Chairperson – Committee of National Representatives:	V.L. Pease	Sweden
Honorary President:	A. Green	Switzerland
ILP Fellow:	J.F.W. Negendank	Germany

Representatives of IUGG & IUGS:	K. Furlong	USA	IUGG
	K. C. Sain	India	IUGG
	J.-P. Cadet	France	IUGS
	Y. Tatsumi	Japan	IUGS
	A. Green	Switzerland	IUGS & IUGG

Associate Members:	J.-P. Burg	Switzerland
	D.G. Gee	Sweden
	A. Morozov	Russia
	F. Roure	France
	M. Zoback	USA
	R. Missotten	UNESCO

Lifetime Members:	P. Ziegler	Switzerland
	M. von Knorring	Sweden
	H. Gupta	India

The Bureau members evaluate submitted projects (task forces, coordinating committees, workshops) and decide the approval according to the criteria of ILP.

Joint IUGS-IUGG meeting in Paris, France, 20 February 2009

Both President and Secretary General went to the IUGS - IUGG meeting held at the UNESCO in Paris to report on ILP matters. S. Cloetingh gave a brief report on the scientific achievements of ILP stating amongst other things that:

- Tectonophysics became the ILP journal
- ILP is founding partner of the IYPE and still supports IYPE
- Several Task Force meetings shall be organized during 2009
- The first IYPE book “New Frontiers in Integrated Solid Earth Sciences” will appear in autumn 2009.

ILP officials pointed out that a successful program absolutely needs support from the mother organisations IUGG as well as IUGS.

Bureau meeting of ILP, Vienna, Austria, 20 April 2009

Minutes of the SCL/ILP Bureau Meeting at the EGU 2009 meeting, Austria Centre Vienna, Room SM1 20 April 2009, 18:00-19:00.

IYPE bureau meetings in London 16 July 2009 and Lisbon 19 November 2009

ILP Secretary General attended both meetings representing ILP at the IYPE bureau.

ACTIVITIES

Workshop "Defining the Lithosphere-Asthenosphere Boundary beneath Continents (DefLAB), Dublin (Ireland) 3 – 5 June 2009

The European Science Foundation Exploratory Workshop on “Defining the Lithosphere-Asthenosphere Boundary Beneath Continents” (DefLAB) brought together geophysicists, geochemists, petrologists and mineral physicists; a total of 31 scientists from 10 European countries (Czech Republic, Denmark, Finland, France, Germany, Ireland, Netherlands, Poland, Spain, United Kingdom), as well as from the United States and Canada, who joined forces to focus on the LAB and its definition over three very full days.

ILP supported this meeting on request of A. Jones.

Task Force IV workshop-Eclogitic conference in China at August 25 - September 3, 2009

After having published the Task Forces results in a new UHPM Special Volume at Journal of Metamorphic Geology devoted to Dr. H.W. Green, one of the visible contributors to the UHPM discipline (J. Metamorphic Geol., 2009, no 27. doi:10.1111/j.1525-1314.2009.00855.x) and a special volume in the European Journal of Mineralogy (EJM: doi:10.1127/0935-1221/2009/0021-xxx) the Task force held the 8th Eclogitic Conference and UHPM Workshop at Xinign, China, 2009, and prepares a Special Volume: "ULTRAHIGH PRESSURE METAMORPHISM: AFTER FIRST DISCOVERY OF COESITE AND DIAMOND.

The Special Volume will cover all aspects of High Pressure and Ultra-High Pressure metamorphic systems, and will be handled by guest editors: Larissa Dobrzhinetskaya, Wali Faryad and Simon Cuthbert.

ILP Joint Task Forces Meeting 5–9 October 2009 in Clermont-Ferrand

From 5-9 October 2009 ILP organized the second Joint Task Forces Meeting in Clermont-Ferrand, France, that has been a great success. The meeting offered an excursion to Mt. Dore and the Chaîne des Puys volcanoes.

The echo of the 75 participants from 21 countries about this meeting was very positive. A special volume of Tectonophysics gathering the scientific output of the meeting is in progress. The envisaged inter Task Force communication took a step forward and encourages for further joint meetings. Program can be seen on ILP homepage.

"5th TOPO-EUROPE Workshop"; 15–17 October 2009 at Klaus Tschira Foundation gGmbH, Studio of Villa Bosch, Heidelberg

The aim of the workshop was to provide an open forum for science on the feedbacks between deep Earth and surface processes. A number of projects, funded in the context of the ESF EUROCORES TOPO-EUROPE, started in 2008. In the meantime a lot of national programs and preparations for TOPO-EUROPE research in broadest sense are underway. The TOPO-EUROPE workshop in Heidelberg enabled to promote cross fertilization and coordination of projects and ideas, as well as serving as a platform for planning the next steps in the long-term TOPO-EUROPE research agenda. The ESF TOPO-EUROPE EUROCORES has generated 13.5 million Euro of third party funding, creating new research opportunities for 60 young researchers.

Along this workshop an excursion was organized by ILP Fellow Jörg Negendank: *Geology and Wine of the Upper Rhine Graben Trough* a cross-section from Heidelberg (eastern graben shoulder) through the graben to Waldhambach (western graben shoulder).

Task Force VI workshop in Abu Dhabi (Lithosphere dynamics and sedimentary basins: the Arabian plate and analogues)

Hosted by the Ministry of Energy of the Emirates the workshop gathered 170 participants from 20 countries (60% from the Middle-East, with 30% from research institutes, 30% from universities and 30 % from industry). A 2,5 days of conference, was arranged with one pre-conference field trip to Al Ain and one post-conference field trip to Dibba. Proceedings will be published in 2010 in a special issue of the Arabian Journal of Geosciences and one Springer volume (Frontiers in Earth Sciences series).

Three workshops organized by ILP Projects TOPO-CENTRAL-ASIA (CC-1/4) in 2009

I-1. International Excursion and Workshop on Tectonic Evolution and Crustal Structure of the Tien Shan Belt and Related Terrains in the Central Asian Orogenic Belt, Bishkek, Kyrgyzstan (June 8 – 17, 2009),
I-2. International Field Excursion and Workshop on Tectonic Evolution and Crustal Structure of the Palaeozoic Chinese Tianshan, Urumqi, China (September 9 – 18, 2009),
I-3. International Discussion Meeting on Continental Geology and Tectonics, Xi'an, China (September 6 – 8, 2009).

Projects and publications

Within the flyer of ILP, most of the active Task Forces and Coordinating Committees are documented (see: <http://www.scl-ilp.org/downloads>).

The activities of the projects (Task Forces and Regional Coordinating Committees) are also documented in the **bibliography** (see homepage and annex).

Theme I: Geoscience of global change

- I-4/Task Force II: New tectonic causes of volcano failure and possible premonitory signals; Chairperson: A. Tibaldi (Italy)

Theme II: Contemporary dynamics and deep processes

- II-1/Task Force VII: Temporal and Spatial Change of Stress and Strain; Chairperson: O. Heidbach (Germany)
- II-5/Task Force V: Global and regional parameters of paleoseismology; implications for fault scaling and future earthquake hazard; Chairperson: P. M. De Martini (Italy)
- II-6/Task Force VIII: Baby plumes in Central Europe; Chairperson: U. Achauer (France)
- II-10/Task Force IV: Ultra-Deep Continental Crust Subduction (UDCCS); Chairperson: Larissa Dobrzhinetskaya (USA)

Theme III: Continental lithosphere

- III-2/Task Force VI: Sedimentary Basins; Chairperson: F. Roure (France)
- III-9/Task Force I: Earth Accretionary Systems (in space and time) (ERAS); Chairperson: P. Cawood (Australia)
- III-10/Task Force III: Lithosphere-Astenosphere Interactions; Chairperson: A. Tommasi (France)

Coordinating Committees

- CC-1/1: Himalayas; Chairperson: Q. Jan (Pakistan)
- CC-1/2: Andes ; Chairperson: V. A. Ramos (Argentina)
- CC-1/3: TOPO-EUROPE; Chairperson: S. Cloetingh (The Netherlands)
- CC-1/4: TOPO-CENTRAL-ASIA; Chairperson: Qingchen Wang (China)
- CC-1/5: DynaQlim ; Chairperson: Markku Poutanen (Finland)
- CC-4: Continental Drilling; Chairperson: M. Zoback (USA)

Thematic IYPE Volume on Frontiers of Integrated Solid Earth Science

Editors S. Cloetingh and J.W.F. Negendank.

According to our decisions in June 2007 we collected in the meantime the following titles of contributions to this volume:

- Alessandro Tibaldi, Federico Pasquarè, Daniel Tormey: *"Volcanism in reverse and strike-slip fault settings"*
- Larissa F. Dobrzhinetskaya & Richard Wirth: *"Ultradeep mantle rocks in the light of advanced scientific technologies"*
- Marco Bohnhoff, Georg Dresen, William L. Ellsworth, Hisao Ito: *"Passive Seismic Monitoring of natural and induced earthquakes: Case studies and socio-economic relevance"*
- J. L. Rubinstein D. R. Shelly, and W. L. Ellsworth: *"Non-Volcanic Tremor and Slow Slip"*
- Lidunka Vočadlo: *"Geomaterials Research - ab initio simulation of the Earth's inner core"*
- Evgenii Burov: *"Thermo-mechanical models for coupled lithosphere-surface processes"*
- W. D. Mooney, S. M. White: *"Recent Developments in Earthquake Hazards Studies"*

- Markku Poutanen, Doris Dransch, Søren Gregersen, Søren Haubrock, Erik R. Ivins, Volker Klemann, Elena Kozlovskaya, Ilmo Kukkonen, Björn Lund, Juha-Pekka Lunkka, Glenn Milne, Jürgen Müller, Christophe Pascal, Bjørn R. Pettersen, Hans-Georg Scherneck, Holger Steffen, Bert Vermeersen, Detlef Wolf: *"DynaQlim – Upper Mantle Dynamics and Quaternary Climate in Cratonic Areas"*
- Magdala Tesauero, Mikhail k Kaban, Sierd Cloetingh: *"A new thermal and rheological model of the European lithosphere"*
- Magdala Tesauero, Mikhail k Kaban, Sierd Cloetingh: *"A new 3D crustal model of Western and Central Europe as a basis for modelling mantle structure"*
- François Roure, Sierd Cloetingh, Magdalena Scheck-Wenderoth, and Peter A. Ziegler: *"Present achievements and further challenges in understanding sedimentary basins dynamics"*

This volume was presented in Lisbon during the IYPE Closure ceremony. ILP honoured Peter Ziegler and Rolf Emmermann with this volume. It was recently presented at a ceremony in Potsdam honoring Rolf Emmermann's achievements with lithosphere research and ICDP, one of ILP's flags ships.

PLANNED FUTURE ACTIVITIES

Workplan for 2010

- Publications in *EOS*, *Episodes* and in *Earth Science Reviews* in preparation,
- Advertising for new support by national science foundations and industry,
- Several sessions at EGU-meeting Vienna, 3 – 7 May 2010,
- ILP Bureau meeting and ILP-session at EGU in Vienna,
- The joint meeting of TOPO-EUROPE & TOPO-CENTRAL-ASIA (Regional Committees) in Bishkek, Kyrghyzstan (Central Asian Institute for Applied Geosciences), originally planned for May/June 2008, will be shifted into 2010,
- 6th workshop of Task Force 6 in Albania,
- ILP Joint Task Forces meeting and workshop in Potsdam, 7-8 October 2010.

Anticipated work plan for the next 5 years

It is the intention of the President to stimulate further projects relating to the TOPOEUROPE philosophy on all other continents.

Since 2009 the running Task Forces ended their 5 years period, new Task Forces shall be installed in 2010 and their scientific goals will be presented during the Potsdam meeting 2010.

The Potsdam meeting shall also be an expression of excellence to the reviewing committee of IUGS and IUGG.

Further on the organization of international conferences with ILP-activities will be in the focus in the coming years as it has been done at AGU, EGU; IUGG, IUGS, IGC etc. in the previous years.

Additionally, it is envisaged to plan a comprehensive international meeting in 2010 reporting about the results of the today running activities.

Roland Oberhänsli, ILP Secretary General

IUGG FINANCIAL REPORT 2008

General Introduction

This report describes the status of the IUGG finances for the year 2008, the first year of the quadrennium 2008-11. The report is sent to the Finance Committee and the Bureau and will be discussed at the meeting in Melbourne, October 8, 2009.

The 2008 budget was approved at the Council meeting in Perugia, July 24, 2007. A few changes have been added since (ICSU is paid in EUR; ILP gets 15K and GeoRisk 8K).

The downward trend in membership is now moving into a more stable period, and it is hoped that new recruiting initiatives even will increase the number of memberships. The membership dues are the economical basis for the activities of IUGG. However sound this situation is right now, it leaves only limited resources for new initiatives. And with an ongoing world wide financial crisis it is expected that IUGG must keep focus on the membership in the future.

By the end of 2008, IUGG had 65 members representing 277 units. 7 members were associate members, 3 African members being moved to Cat 1 membership during the year through an UK grant. On January 1, 2008, 1 member is supposed to have withdrawn: Venezuela. On January 1st, 2008, Argentina lowered their category to Cat 3 after approval by the Council in Perugia, July 2007.

On January 1st, 2008, 9 members were in arrears with their dues. By the end of the year the number was down to 4. In 2009 the number of observers went up to 12 again. At the time of writing the number of members in arrears with dues is now down to 8.

The price of 1 unit has gone up again from \$1,630 in 2007 to \$1,675 in 2008. The price in a given year is determined according to an inflator index in September in the year before according to the decision of the GA, Boulder 1995.

Realizing that several members have EUR currencies and several associations are located in the EUR zone it is now made possible to do transactions in EUR as well as in USD and DKK.

A student assists me with the keeping order in my files, writing letters etc. However, in 2007 my former Assistant Treasurer decided to stop and I have not yet found a substitute.

Content:

- | | |
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| 1. A review of "The summary of the IUGG accounts in US dollars for 2008" | page 75 – 78 |
| 2. An overview of travel expenses in 2008 | page 78 |
| 3. An overview of IUGG grants, allocations and inter-association activities in 2008 | page 78 – 79 |
| 4. Some Membership information and statistics (July 8) | page 79 – 80 |

1) Comments to The summary of the IUGG accounts in US dollars for 2008

IUGG has now accumulated more cash than 1 years turn over. It is noticed that IUGG always has at least \$100.000 as reserve for the next GA.

SUMMARY OF IUGG ACCOUNTS 2008		
US dollars	Accounts	Budget
RECEIPTS		
1. Membership Subscription	438.121,59	431.500,00
2. ICSU Grants	0,00	
3. Assembly Surcharge	0,00	
4. Contracts with ICSU	0,00	
5. Sales of Publications	152,76	200,00
6. Miscellaneous		
a. Interest	16.483,20	12.500,00
b. Gain on exchange	0,00	
c. Other	224.911,51	
7. Total Receipts	679.669,06	444.200,00
8. Balance on 1/1 2008	747.055,34	754.800,00
10. Check Sum	1.426.724,41	1.199.000,00
EXPENDITURES		
11. Administration		
11.1 Personnel	29.119,87	20.000,00
11.2 Equipment	1.462,82	5.000,00
11.3 Supplies	4.147,24	5.000,00
11.4 Communications	78,13	8.000,00
11.5 Travel, Administrative	50.663,43	50.000,00
11.6 Miscellaneous	193.714,46	1.000,00
11.7 Travel, representative, incl. liaison officers	8.570,48	5.000,00
12. New initiatives	10.000,00	50.000,00
13. General Assemblies		
13.1 Organization	0,00	0,00
13.2 Travel	0,00	0,00
14. Symposia	19.500,00	20.000,00
15. Annual allocations		
15.1 Annual allocations		
15.1a Associations	223.075,00	238.600,00
15.1b WCRP, EMSEV	6.189,56	4.700,00
15.2 Intr. of IACS	22.980,00	20.000,00
16. Dues and Grants		
16.1 ICSU	21.899,42	17.000,00
17. Union activities		
17.1 GeoRisk, SEDI, CMG	14.000,00	28.000,00
17.2 Inter-Union Science (FAGS, ILP)	27.000,00	29.000,00
18. Contries in need		
18.1 Travel grants	0,00	0,00
19. Miscellaneous		
19.1 Miscellaneous	0,00	0,00
19.2 Professional services	4.193,13	3.000,00
19.3 Fees	3.631,34	2.000,00
19.4 Loss on exchange	1.988,25	0,00
20. Contingencies	0,00	6.250,00
21. Total Expenditures	642.213,12	512.550,00
22. Balance on 31/12 2008	784.511,28	686.450,00
23. Total	1.426.724,40	1.199.000,00

July 7, 2009

Aksel Walløe Hansen

		USD/DKK
Exchange rates:	Line 8	5,06 =31 DEC, 2007
	Line 22	5,21 31 DEC, 2008
	Other:	5,07
		USD/EUR
	Line 8	0,69 =31 DEC, 2007
	Line 22	0,70 31 DEC, 2008
	Other:	0,68

The summary of the IUGG accounts is in USD and is based on my USD, EUR and DKK accounts in Danske Bank. In addition, we have also a Mastercard account which is mostly used in connection with traveling. One more account appears in my full accounting. This account is used to get higher than normal interest rates for a specified period of say 3 - 6 months.

The accounts of the treasurer's office are audited by a chartered auditor.

The accounting:

My accounting is based on a cash flow model. This means that the balances not necessarily reflect the real financial status of the union.

I'll now go through the accounting line by line and compare it with the budget and where relevant I'll list my comments to the different lines:

Receipts

1

The income from members is close to the budgeted. Right now (July 8, 2009) 263 units are paid for 2008 compared to 266 for 2007 exactly one year ago. In comparison the total number of units is 277 for the year 2008.

2, 4

In 2008 IUGG did not receive any ICSU grants.

3

See next note

6.c

The head tax minus some small expenditures (US\$ 217K) from the Perugia 2007 GA was paid in 2008.

Expenditures

11.1

In 2008 IUGG paid an assistant SG, Katina Rogers, and a web-master, Dmitry Krupski. And an assistant for the Treasurer.

11.2 through 11.7

Most of the Perugia money (US\$ 192K) was forwarded to the seven old associations leaving about 25K for IUGG.

The sum of 11.7 includes liaison officers travel expenses only.

12

The new line 12 covers new initiatives offered to the associations as 2 year grants, including projects under the 2007 Geophysics in Africa initiative. As of mid 2009 only US\$ 15K has been distributed although 40 K has been awarded.

14

See page 6 for details. One grant was not paid because no contact could be established.

15.1a

All 8 associations have received their allocations for 2008. The total allocated amount includes the 20 K added by the union to the normal 50% share of the net income.

The new distribution percentages for 2008 – 2011 are

IACS	9,340
IAG	12,140
IAGA	17,415
IAHS	11,030
IAMAS	15,765
IAPSO	10,765
IASPEI	14,205
IAVCEI	9,340

15.1b, 16.1

As of 2007 IUGG is paying its ICSU contribution in EUR as requested by ICSU (it was decided in Karlsruhe, August 2008). The payment was increased in 2008 as compared to 2007. Also the contribution to WCRP (line 15.1b) is now paid in EUR.

17.1

Substantially lower than in the budget because the travel expenses of liaison officers are moved to line 11.7.

22

The balance by the end of 2008 is higher than in previous years and also higher than the budget.

2) An overview of administrative and representative travel expenses in 2008

The major 2008 event was the Bureau/EC meeting in Karlsruhe, August 2008.

The numbers quoted here can deviate from the actual values in the accounting due to fluctuations in the exchange rates from day to day.

Travel expenses (Bureau + EC)

Bureau-EC meeting, Karlsruhe	\$32.652
President, Vice-President, Secretary General	\$17.676
Subtotal	\$50.328

Liaison Officers

Charlie Barton, Kiev, Ukraine	\$ 4.421
Guoxiong Wu, Maryland, USA	\$ 4.204
Subtotal	\$ 8.625

Total **\$59,653**

3) An overview of IUGG grants, allocations, inter-association activities and union activities in 2008

i) Line 12 (New initiatives grants, including “Geophysics in Africa”)

IAGA: eGY Africa - 2009 Workshop	\$10.000
Total	\$10.000

ii) Line 14 (IUGG 2008 Symposia grants)

IAMAS, ICCP Conference	\$ 2.000
IAMAS. Effects of Climate	\$ 2.000
IACS, Mass Balance	\$ 1.500
IAGA, symposium on Aeronomy	\$ 1.500
IAVCEI, Collapse of Calderas	\$ 1.500
IAPSO, Deep Ocean exchanges	\$ 1.500
IAHS, 3. Int. Conf. Water	\$ 2.000
IASPEI, 7th Asian Seismo., Frontiers in stress	\$ 3.000
SEDI, SEDI 2008 workshop	\$ 2.000
GeoRisk, ESOF 2008	\$ 1.500
COSPAR, Sci. Assembly No. 37	\$ 1.000
Total	\$19.500

iii) Lines 15.1b (Inter-Association Activities)

WCRP	\$ 4.180
EMSEV	\$ 2.000
Subtotal	\$ 6.180

iv) Line 17.1, 17.2 (Union Activities)

GeoRisk	\$ 6.000
SEDI	\$ 4.000
CMG	\$ 4.000
FAGS	\$12.000
ILP	\$15.000
Total	\$41,000

v) Line 13.2, 18.1 (traveling support for General Assemblies)

No support paid in 2008

Total **\$ 0**

4) Some Membership information and statistics

At the time of writing (July 7, 2009) IUGG has 65 members (64 on January 1st) representing 278 units. Georgia has joined IUGG as an Associate member, and the Philippines are assumed to have withdrawn on January 1st. 4 members are in associate status, 53 members are in paid-up status and 8 members are in observer status.

The 8 members in observer status are

In category 1

Armenia (1. year as observer)
Colombia (1. year as observer)
Croatia (3. year as observer)
Iceland (1. year as observer)
Iran (3. year as observer)
Vietnam (1. year as observer)

In category 2

Nigeria (1. year as observer)

In category 3

Brazil (1. year as observer)

In addition three members started 2009 as observers, but all three have paid their dues for 2008 and earlier as of this date (July 7).

The 8 observer countries together represent 11 units (and a debt of US\$ 24.875 in total).

Venezuela is assumed to have withdrawn from IUGG.

Greece was admitted as a new member in cat 3 in 2008.

See the following page for further details.

MEMBERS OF IUGG, 2008
(December 31)

Members by category

4 adhering bodies in	A	
Bolivia		
Bulgaria	cat 1 as of January 2009	
Peru		
Mauritius		
1 adhering body in	11	35 units
USA		
3 adhering bodies in	8	60 units
Germany		
Great Britain		
Japan		
1 adhering body in	7	15 units
France		
4 adhering bodies in	6	40 units
Canada		
China		
Italy		
Russia		
4 adhering bodies in	5	28 units
Australia		
India	cat 6 in 2009	
Spain		
Switzerland		
6 adhering bodies in	4	30 units
Academy Sinica, Taipei		
Belgium		
Denmark		
Netherlands		
Norway		
Sweden		
6 adhering bodies in	3	18 units
Argentina	new in cat 3 in 2008	
Austria		
Brazil	observer 2009	
Finland		
Greece	new in 2008	
South Africa		

Members by category

13 adhering bodies in	2	26 units
Chile		
Czech Republic		
Egypt	observer 2009	
Hungary		
Ireland		
Korea, South		
Mexico		
Nigeria	observer 2009	
Pakistan		
Poland		
Portugal		
Thailand		
Turkey		
22 adhering bodies in	1	22 units
Albania		
Armenia	observer 2009	
Bosnia-Herzegovina		
Colombia	observer 2009	
Croatia	observer 2009	
D.R. Congo		
Estonia		
Ghana		
Iceland	observer 2009	
Indonesia		
Iran	observer 2009	
Israel		
Jordan		
Luxembourg		
Monaco		
Morocco		
Mozambique		
New Zealand		
Romania		
Slovak Republic		
Slovenia		
Vietnam	observer 2009	
Countries withdrawn in 2008	category	
Venezuela	1	
New members in 2008		
Greece	3	

Aksel Walløe Hansen, IUGG Treasurer
July 7, 2009

ADDITIONAL UNION MATTERS

AWARDS AND HONORS

The 2009 Prince Albert I Medal has been awarded to **Harry Bryden** (University of Southampton, UK) in recognition of his fundamental contributions to understanding the ocean's role in the global climate system. The Medal will be presented on 22 July at the IAMAS-IAPSO-IACS 2009 Joint Assembly in Montreal.

The following IUGG officers were bestowed the 2009 AGU Fellows: **Ian Campbell** (co-Chair of the IAVCEI Commission on Large Igneous Provinces); **Eigil Friis-Christensen** (IAGA President); and **Robert Vincent** (IUGG Representative to the ICSU Scientific Committee on Solar-Terrestrial Physics, SCOSTEP).

The 2009 EGU August Love Medal was awarded to **Ulrich Christensen** (IUGG-SEDI Advisory Committee Member) for his fundamental contributions to geodynamics through studies of subsolidus and the mantles of other terrestrial planets and rotating convection and magnetoconvection aimed at probing the planetary interiors throughout the solar system.

The 2009 EGU Petrus Perigrinus Medal was awarded to **Eigil Friis-Christensen** (IAGA President) for his fundamental contributions to our knowledge of the Earth's magnetic field from space and his innovative leadership in geomagnetism.

The 2009 EGU Arthur Holmes Medal was awarded to **David Gubbins** (IUGG-SEDI Advisory Committee Member) for his fundamental research on the origin of geomagnetic reversals and the thermo-mechanical behaviour of the Earth's core.

Harsh Gupta (IUGG Vice-President) was elected President (2010-2012) of the Asia Oceania Geosciences Society (AOGS) at the 6th Annual Meeting of the Society in Singapore, 11-15 August 2009. In his mission statement Gupta mentioned that he would foster the cooperation between AOGS and ICSU, IUGG, IUGS, AGU and EGU in the areas of natural hazards and development of joint programs to address global issues.

Alik Ismail-Zadeh (IUGG Secretary General) received the 2009 International Award of the American Geophysical Union for promoting and fostering geophysics between Eastern European scientists and their colleagues worldwide. The award was presented at the AGU Joint Assembly in Toronto, Canada, on 26 May.

David Kerridge (former IAGA President) received the Royal Astronomical Society Award for Services to Geophysics for his leadership in a multi-agency study to assess the tsunami risk to the United Kingdom.

The U.S. National Academy of Sciences elected at its April Annual Meeting **Kurt Lambeck** (Member of the SEDI Advisory Board) as a Foreign Associate of the Academy.

The Atmospheric Science Librarians International (ASLI) awarded the book *Aerosol Pollution Impact on Precipitation: a Scientific review* (editors **Zev Levin** and **W. R. Cotton**) "2009 ASLI Choice" Honorable mention for an authoritative, well-organized, forum-based approach to the evaluation of a problem. ASLI's Choice is an award for the best book of 2009 in the fields of meteorology / climatology / atmospheric sciences. This book was written under the sponsorship of IUGG and WMO (World Meteorological Organization).

Mark A. Parsons, member of the IUGG Union Committee on Data and Information, received the Charles S. Falkenberg Award of the American Geophysical Union (AGU), presented jointly by AGU and the Earth Science Information Partnership (ESIP), at the 2009 Summer Federation of Earth Science Information Partners Conference, held 7–10 July 2009 in Santa Barbara, California (USA). The award honors "a scientist under 45 years of age who has contributed to the quality of life, economic opportunities, and stewardship of the planet through the use of Earth science information and to the public awareness of the importance of understanding our planet".

Ignacio Rodriguez-Iturbe (Princeton University, USA) was awarded the 2009 AGU William Bowie Medal for outstanding original research contributions across a uniquely broad range of topics spanning hydrology,

meteorology and ecology and for his relentless, unselfish and remarkably influential promotion of cooperation in the geophysical sciences. The medal is the highest honor of AGU established in 1939 in honor of William Bowie (IUGG President, 1933-1936) for his “spirit of helpfulness and friendliness in unselfish cooperative research.” Rodriguez-Iturbe has served IUGG in several capacities: First Vice-President of IAHS, Vice-President of the IAHS International Commission on Water Resources Systems, Chairman of the IAHS Working Group on Scale Problems in Hydrology, and Associate Editor of the IAHS Journal of Hydrological Sciences.

Barbara Romanowicz (University of California at Berkeley, USA) was awarded the 2009 AGU Inge Lehmann Medal for her work covering the full span of seismological studies from the crust to the inner core but her transformational contributions come from her investigations of attenuation in the Earth in particular, its lateral variations. Romanowicz is a member of the Advisory Committee of the IUGG Union Commission on the Study of the Earth’s Deep Interior (SEDI).

Fred Spilhaus (former Chair of the IUGG Finance Committee) made a Royal Astronomical Society honorary fellow. The EGU honored **Fred Spilhaus** with a special certificate of appreciation for his exceptional support of European geoscientific societies and his fundamental contributions to the mutual cooperation between AGU and EGU and its predecessors for the benefit of science and humanity. The Council of Engineering and Scientific Society Executives (CESSE) honored **Fred Spilhaus** by renaming its Council of Scientific Society Executives Leadership Award *the A. Fred Spilhaus Leadership Award*. Awardees are distinguished “for excellence in management of the scientific and/or engineering societies, and for outstanding contributions to CESSE.”

The 2009 Eugene LaFond Medal has been awarded to **Bamol Ali Sow** (University of Ziguinchor, Senegal). This Medal is awarded to an early career ocean scientist from a developing world country, who presents an excellent paper on oceanography at one of IAPSO-sponsored symposium. The Medal was presented at the MOCA-2009, joint IAMAS-IAPSO-IACS Assembly in Montreal.

The 2009 EGU Hans Oeschger Medal was awarded to **Thomas Stocker** (IAPSO National Correspondent, Switzerland) for his important contributions to the understanding of the role of the oceans in past climate changes and for his involvement in ice core studies.

András Szöllösi-Nagy (Secretary of the International Hydrological Programme of UNESCO) and **Kuniyoshi Takeuchi** (Chair of the IUGG GeoRisk Commission) are awarded the 2008 International Contribution Award by the Japan Society of Civil Engineers (JSCE) for their outstanding contributions to global water issues.

The 2009 EGU Sergey Soloviev Medal is awarded to **Jochen Zschau** (IASPEI – European Seismological Commission President) for his commitment and enthusiasm to bridge the gap between fundamental research related to the physics of natural hazards and the implementation of risk reduction technologies for the benefit of society.

APPOINTMENTS

Peter Fox (Chair, IUGG Union Commission on Data and Information) and **Bernd Richter** (International Earth Rotation and Reference Systems Service, Germany) were appointed to the new ICSU Scientific Committee on Information and Data (SCCID). This committee will provide ICSU with broad expertise and advice on a strategic direction in the area of Scientific Data and Information. The committee will need to establish and assert a visible and effective strategic leadership role, on behalf of the global scientific community, in relation to the policies, management and stewardship of scientific data and information.

Harsh Gupta (IUGG Vice-President) was re-appointed to the ICSU Committee on Scientific Planning and Review (CSPR). The Committee coordinates the development of proposals for major new scientific initiatives by ICSU and to advise the ICSU Executive Board on priorities for such initiatives. The Committee also reviews the activities carried out by ICSU's Interdisciplinary Bodies, advises the Executive Board on the future course of these activities, and oversees the Grant Programme.

Alik Ismail-Zadeh (IUGG Secretary General) was appointed the Chair of the new Focus Group on Natural Hazards of the American Geophysical Union. The Focus Group will foster a focus on studies of geophysical hazards and promote fundamental research into the links between extreme natural hazards and dynamic processes on Earth and in space; real-time and long-term monitoring of active Earth processes; quantitative natural-hazard modeling; forecasting of extreme events and reducing predictive uncertainties; and implementation of effective strategies and designs for hazard mitigation and disaster management worldwide.

Jean-Bernard Minster and **Ruth Neilan** (nominated by IUGG) were appointed to the new ICSU World Data System Scientific Committee (WDS-SC). This committee will develop and implement a plan for the creation of the World Data System by incorporating the former ICSU World Data Centres (WDCs), the Federation of Astronomical and Geophysical data analysis Service (FAGS), and other 'state-of-the-art' data centres and services. J-B Minster will chair the WDS-SC.

Kuniyoshi Takeuchi (Chair, IUGG Union Commission on Geophysical Risk and Sustainability) was appointed a member of the ICSU Scientific Committee on Integrated Research on Disaster Risk (IRDR). The IRDR programme addresses the impacts of disasters on regional and global scales and brings together the combined talents of the natural, socio-economic, health and engineering sciences from around the world. IRDR will focus on hazards related to geophysical, oceanographic, climate and weather trigger events – and even space weather and impact by near-Earth objects.

OBITUARIES

Carl Kisslinger (1926-2008), a geophysicist who furthered scientific and international understanding through his tireless devotion to his field, died on 31 December 2008 in Boulder. Kisslinger left a profound impact on the national and international geophysical organizations including the American Geophysical Union, the Seismological Society of America, and IUGG. He was elected IUGG Bureau Member (1975-1983) and Vice-President (1983-1991).

On 3 April 2009 **Lubomir W. Baran** passed away. Professor Baran was an accredited delegate of Poland to the IUGG Council. He contributed substantially to the modern geosciences and brought up a few generations of top scientists in that field. As a long-standing active member of IUGG and IAG, he strongly supported international and interdisciplinary cooperation in research. We will always remember him as an outstanding scientist, honorable man, and a true friend. He will be missed very much by many of his friends and collaborators.

Israel M. Gelfand (1913-2009), one of the giants of XXth-century mathematics, whose work cleared paths for other thinkers in fields as diverse as physics, biology, medicine and seismology, passed away. Gelfand did not achieve fame from attacking and solving famous, intractable problems. Instead, he was a pioneer in untrodden mathematical fields, laying the foundation and creating tools for others to use. "People always compare him with great mathematicians like Euler or Hilbert or Poincaré," said Vladimir Retakh (Rutgers University), where Gelfand spent most of his time as a professor after leaving the Soviet Union in 1989. "He was probably the last of the greatest who worked in almost every area of mathematics," continued Retakh...

Albert Tarantola (1949-2009), a distinguished French geophysicist, passed away on 6 December 2009 at the age of 60. Professor Tarantola was a Chair of the IUGG Commission on Mathematical Geophysics (1987–1992). Tarantola was an author of about 100 scientific papers and the author of the well-known book on inverse problems in geophysics (*Inverse Problem Theory: Methods for Data Fitting and Model Parameter Estimation*, Elsevier, 1987). Tarantola was a leader of the Geophysical Tomography group of the Institut de Physique du Globe de Paris that developed modern methods for the interpretation of waveform data. He taught at the University of Paris as well as at Beijing University, California Institute of Technology, Princeton University, and Stanford University.