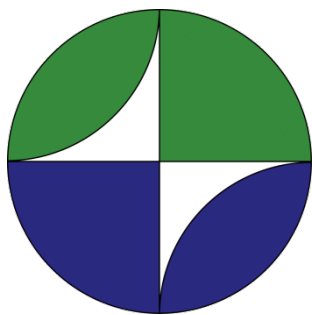


INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS
UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE

Annual Report 2024



INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS
UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE

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INTRODUCTION

Established in 1919, the International Union of Geodesy and Geophysics (IUGG) is an 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.

The IUGG is comprised of eight semi-autonomous International Associations, each responsible for a specific range of topics or themes within the overall scope of the Union activities. Each Association establishes commissions, divisions, services, working groups, or other entities. In addition, IUGG establishes Union Commissions and other activities to conduct inter-association science (see page 3).

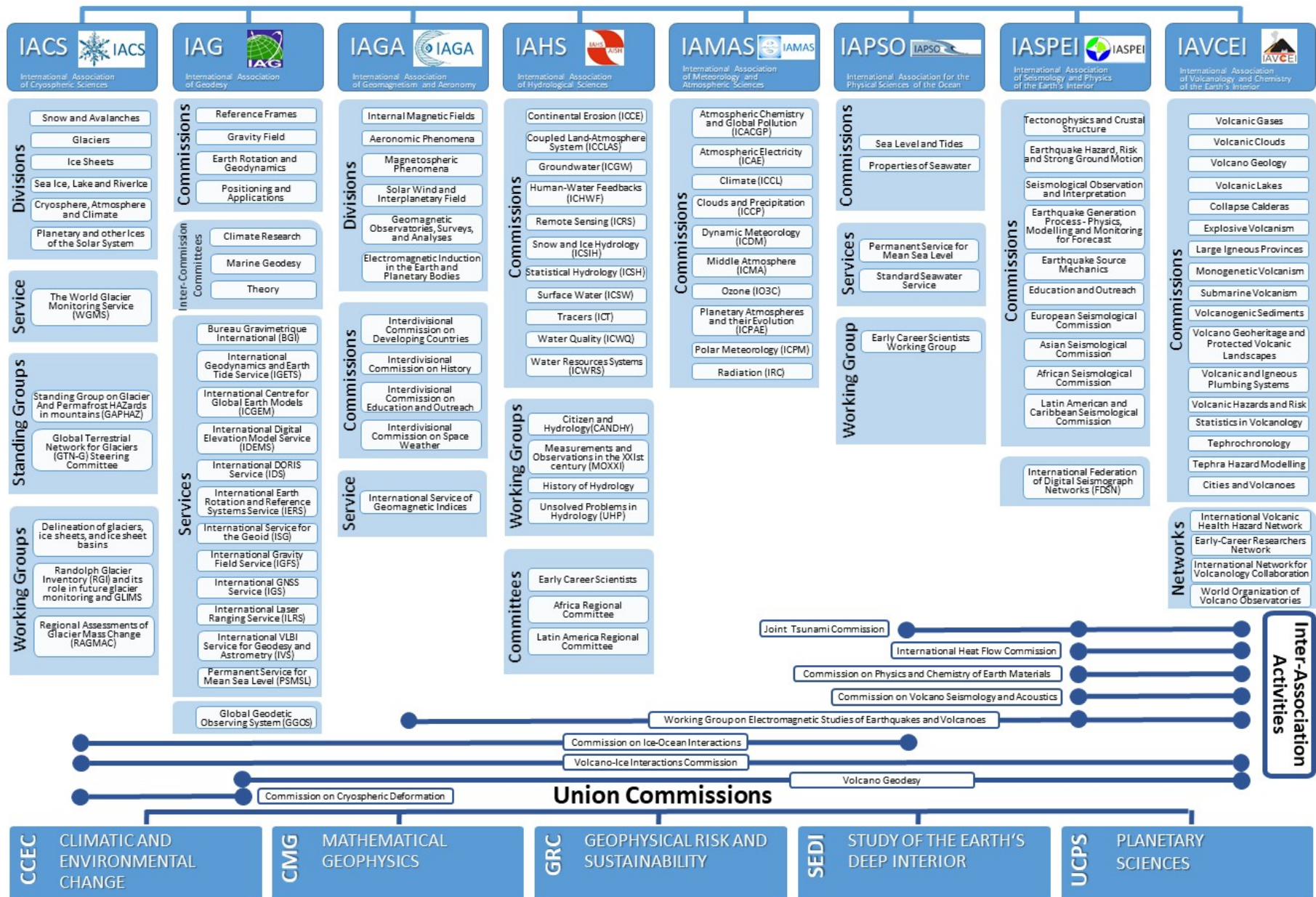
IUGG is one of over 40 scientific unions adhering to the International Science Council (ISC). ISC provides a global forum for scientists to exchange ideas and information and to develop standard methods and procedures for all fields of research. IUGG brings expertise on Earth studies from researchers in its International Associations and Commissions. As a member of ISC, 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 world-wide interdisciplinary programs and projects. These programs have set a model for international and interdisciplinary cooperation in geosciences (see page 4).

The work of IUGG is related to that of many other scientific organizations. Some of these are inter-governmental such as those affiliated with the United Nations (UN); some are Interdisciplinary Bodies of ISC, and others are organizations of particular interest to specific Associations (see page 4).

International Union of Geodesy and Geophysics (IUGG)

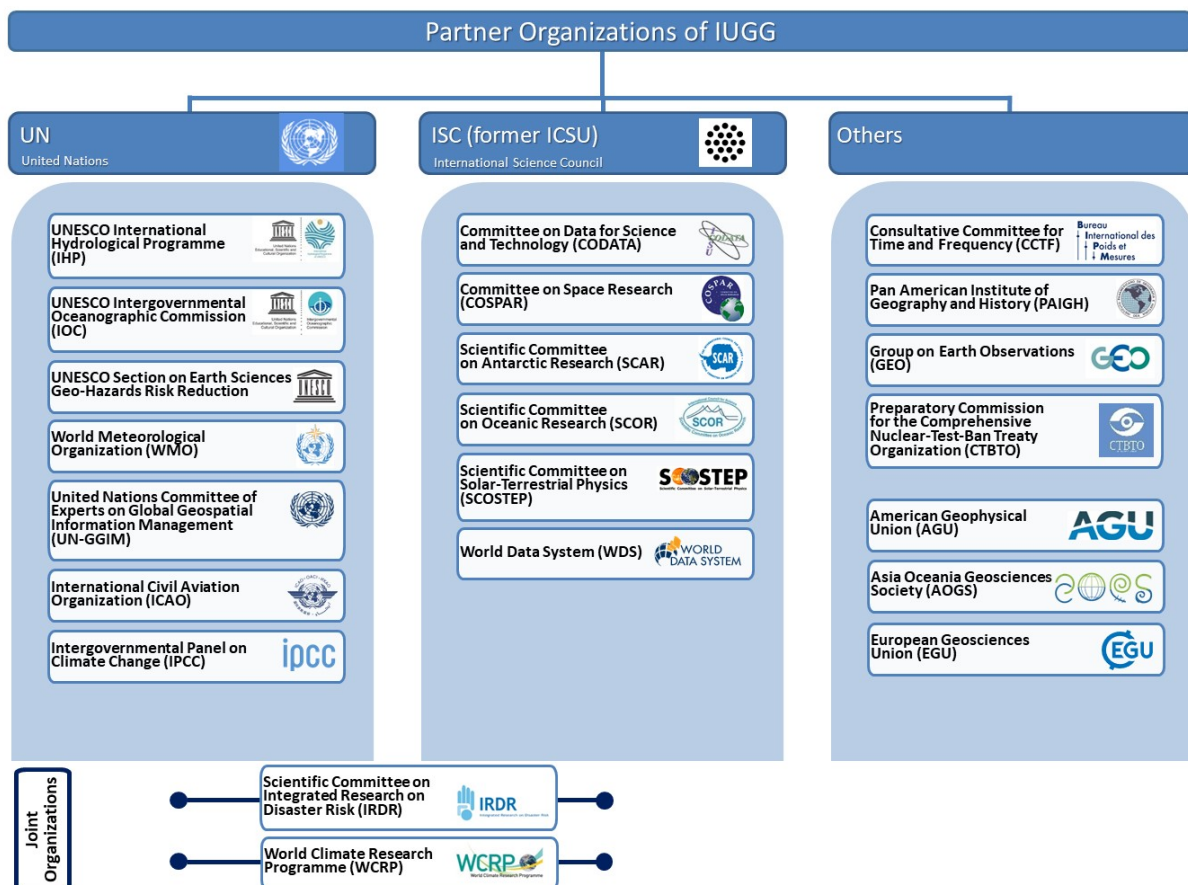
Associations



Programs and Projects initiated and/or supported by IUGG

Current	Past
<ul style="list-style-type: none"> • Global Geodetic Observing System (GGOS, an IAG program) • Integrated Research on Disaster Risk (IRDR) • International Lithosphere Program (ILP, a joint IUGS-IUGG activity) • International Decade of Sciences for Sustainable Development (2024-2033) • World Climate Research Programme (WCRP) • World Data System (WDS) 	<ul style="list-style-type: none"> • International Year of Basic Sciences for Sustainable Development (IYBSSD, 2022/2023) • International Year of Global Understanding (IYGU, 2016) • Mathematics of Planet Earth (MPE, 2013) • International Geosphere-Biosphere Programme (IGBP, 1987-2015) • International Year of Deltas (IYD, 2013-2014) • Extreme Natural Hazards and Societal Implications (ENHANS, 2010-2014) • International Year of Planet Earth (IYPE, 2007-2010) • Electronic Geophysical Year (eGY, 2007-2008) • International Polar Year (IPY, 2007-2008) • International Heliophysical Year (IHY, 2007-2008) • International Decade for Natural Disaster Reduction (IDNDR, 1990-1999) • Geodynamics Project (1972-1979) • Global Atmospheric Research Program (1967-1980) • International Hydrological Decade (1965-1974) • Upper Mantle Project (1964-1970) • International Geophysical Year (IGY, 1957-1958)

Programs and Projects initiated and/or supported by IUGG



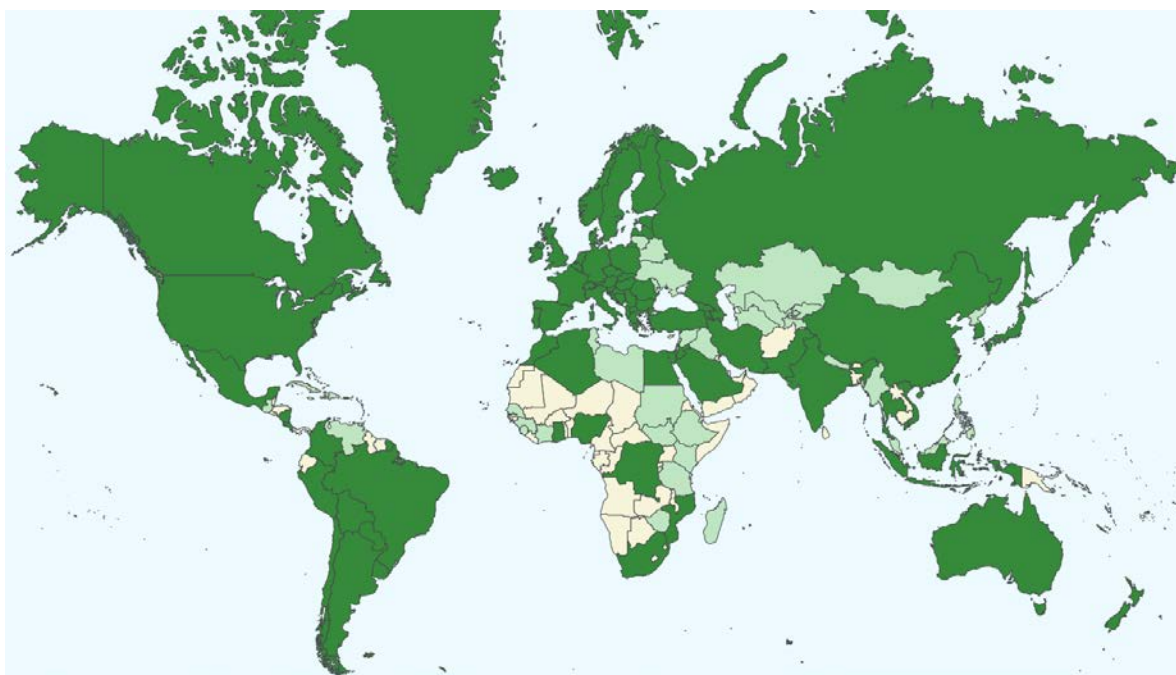
Partner Organizations of IUGG

GENERAL INFORMATION

MEMBERSHIP & FINANCE

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 website. Each Adhering Body establishes a National Committee for IUGG, and names Correspondents to each Association (as appropriate).

As of 31 December 2024, IUGG has 74 National Members including 59 countries in paying status. The paying members are placed in categories from 1 to 14 depending on their financial contribution to the Union (the membership dues rise with increasing category number). At present, the highest category used is category 11. The members pay dues according to a number of units assigned to their category (in category 1 the number of units is 1, and in category 11 the number is 35). According to a decision of the XXII IUGG General Assembly (Boulder, USA, 1995), the price of 1 unit is determined every year using an inflator index obtained from the Bureau of Labor Statistics, U.S. Department of Labor. In 2024, the price of 1 unit was US\$ 2,460. The 59 paying members represent a total of 278 units, which is equivalent to a total income of US\$ 683,880. The funds received as dues are the basis for IUGG's operations as a scientific union, although Union associations may have their own funds earned via book selling or donations. The funds are spent to support: (i) scientific activities of Union Associations and Commissions; (ii) international scientific programs, projects and services; (iii) general and scientific assemblies, symposia, workshops, and schools; (iv) the IUGG Grants Program; (v) the International Lithosphere Program; (vi) the International Science Council; (vii) travel of students, early career scientists, and scientists from developing countries to attend scientific meetings; and (viii) administration and management.



Regional distribution of current (dark green) and former (light green) IUGG Member Countries (as of 31.12.2024)

Several IUGG National Committees have published Annual and Quadrennial Reports on their activities over the last years. All reports are available [here](#). IUGG National Committees are invited to [submit](#) their annual/quadrennial reports at any time.

STRUCTURE

Responsibility for directing the Union's affairs is vested in the IUGG Council by the Statutes and By-Laws. The IUGG Council consists of the Council Delegates, who are designated by the Adhering Body of their respective countries. The Council is convened at each quadrennial General Assembly but can make decisions by electronic voting in between General Assemblies. 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. The IUGG Secretariat is located at the GFZ Helmholtz Centre for Geosciences (GFZ) in Potsdam, Germany, and assists in the implementation of the decisions of the Bureau, Executive Committee and the Council.

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 activities, assemblies, workshops, and symposia, although only scientists from member countries with dues paid may serve as Association Presidents.

The eight International Associations are listed below, and short reports on their 2024 activities are included here. Additional information about each Association is given on their websites, which can be accessed from the IUGG [website](#).

- 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 2024, the following bodies were active:

- Commission on Climatic and Environmental Changes (CCEC)
- Commission on Mathematical Geophysics (CMG)
- Commission on Geophysical Risk and Sustainability (GRC)
- Commission on the Study of the Earth's Deep Interior (SEDI)
- Commission on Planetary Sciences (UCPS)

Inter-Unions Commission

The International Lithosphere Program (ILP), 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 re-define 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 website. The most recent General Assembly was held in Berlin, Germany, 11-20 July 2023. The next IUGG General Assembly will take place in Incheon, Rep. of Korea, in summer 2027.

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 opportunity 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.

IUGG OFFICERS FOR 2023-2027

IUGG Bureau

President:	Chris Rizos	AUSTRALIA
President-Elect:	Mioara Manda	FRANCE
Secretary General:	Alexander Rudloff	GERMANY
Treasurer:	Niels Andersen	DENMARK
Members:	Athena Coustenis	FRANCE
	Andrew Mackintosh	AUSTRALIA
	Virendra Tiwari	INDIA

IUGG Executive Committee

IUGG Bureau Members

Immediate Past President:	Kathy Whaler	UK
IACS President:	Liss M. Andreassen (2023-2025)	NORWAY
	Mathieu Morlighem (2025-2027)	USA
IAG President:	Richard Gross	USA
IAGA President:	Andrew Yau	CANADA
IAHS President:	Berit Arheimer (2023-2025)	SWEDEN
	Salvatore Grimaldi (2025-2027)	ITALY
IAMAS President:	Andrea Flossmann	FRANCE
IAPSO President:	Hans van Haren	NETHERLANDS
IASPEI President:	Michelle Grobbelaar	AUSTRIA/SOUTH AFRICA
IAVCEI President:	Costanza Bonadonna	SWITZERLAND

IUGG Finance Committee

Chair:	Jan Krynski	POLAND
Members:	Archana Bhattacharyya	INDIA
	Priscilla Grew	USA

Association Secretaries General

IACS Secretary General:	Richard Essery	UK
IAG Secretary General:	Daniela Thaller	GERMANY
IAGA Secretary General:	Monika Korte	GERMANY
IAHS Secretary General:	Jean-Marie Kileshye Onema	SOUTH AFRICA/D.R. CONGO
IAMAS Secretary General:	Keith Alverson	CANADA/USA
IAPSO Secretary General:	Silvia Blanc	ARGENTINA
IASPEI Secretary General:	Johannes Schweitzer	NORWAY
IAVCEI Secretary General:	Ulrich Küppers	GERMANY

Union Commission Officers

Union Commission on Climatic and Environmental Changes (CCEC)

Chair:	Jianping Li	CHINA
Secretary:	Tonie van Dam	USA

Union Commission on Mathematical Geophysics (CMG)

Chair:	Alik Ismail-Zadeh	GERMANY
Secretary:	Andrew Valentine	UK

Union Commission on Geophysical Risk and Sustainability (GRC)

Chair:	John LaBrecque	USA
Secretary:	Katia Kontar	USA

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

Chair:	Mathieu Dumberry	CANADA
Secretary:	Michael Bergman	USA

Union Commission on Planetary Sciences (UCPS)

Chair:	Shuanggen Jin	CHINA
Secretary:	Paul Hartogh	GERMANY
	Scot Rafkin	USA

Inter-Unions Commission: International Lithosphere Program (ILP)

President:	Hans Thybo	TÜRKIYE
Secretary General:	Mian Liu	USA

IUGG SECRETARIAT

The IUGG Secretariat is the informational centre of IUGG. It implements the organization plans, organizes the daily management of the Union, prepares business meetings, represents the Union at conferences, publishes documents (e.g., Newsletters, Yearbooks, Annual Reports) and helps National Members to be engaged in the Union's and its Associations activities.

Since the year 2013, the IUGG Secretariat is located at

GFZ Helmholtz Centre for Geosciences
Telegrafenberg, A17
14473 Potsdam
GERMANY

<i>Executive Secretary:</i>	Franz G. Kuglitsch	GERMANY
<i>Assistant:</i>	Katrin Gundrum	GERMANY
<i>Webmaster:</i>	Jan Schubert	GERMANY

MESSAGE FROM THE PRESIDENT

2024 was the year of consolidation. That means the Associations and Union Commissions were progressing their plans and initiatives. The many Working Groups, Commissions, Sub-Commissions, etc, have completed their Terms of Reference and recruited the scientists to engage in their work programmes. A total of 67 scientific meetings in 32 countries were organised under the umbrella of IUGG. The IUGG's activities have well and truly started. One can track now the quadrennial rhythm, such as the planning of conferences and workshops. All this is documented in the IUGG's monthly [E-Journals](#).



One important tool that the current IUGG leadership has is the need to develop a new Strategic Plan (SP) 2024-2031. (The past Strategic Plan can be found [here](#).) The SP document is important, as it summarises the objectives that guide the activities and plans of the IUGG's Associations, Union Commissions, and the Bureau. The SP also identifies the current critical issues, challenges and opportunities that the IUGG needs to address.

The development of the SP 2024-2031 necessitated the IUGG Bureau confronting critical issues in a "strategic" manner. For the first time the IUGG has not palm off the development of the SP 2024-2031 to a "Strategic Planning Committee". It is now a collective responsibility of the Bureau, chaired by the President-Elect Mioara Manda. By the close of 2024 a draft SP was ready for discussion and "stress testing". This process will continue through the start of 2025, with the goal of having a first public draft before mid-2025. This draft document will then be distributed to the Associations and Union Commissions for feedback.

As I stated in last year's President's Message, we hope that our SP summarises what the IUGG stands for, how it promotes itself, what its core mission and vision is, how to manage communications with all stakeholders, how it networks and engages with diverse communities (researchers, policy makers, and society at large), and the effectiveness of its administration and governance. It may require new committees, a new budget, new communication and feedback channels, a better articulation of what the IUGG does, the value of its science and services, and more.

Although the IUGG interacts with a range of external organisations and agencies, chief amongst them is the International Science Council ([ISC](#)) of which the IUGG is one of the 44 Unions (or "Category 1 Members"). The ISC organised in January 2025 its General Assembly, in Muscat, in the Sultanate of Oman. (A report on the IUGG's participation can be found [here](#).) The IUGG is a member of a loose grouping of "[GeoUnions](#)" within the ISC, and several online meetings were held during 2024. (The IUGG's Secretary-General will report on other external engagements in his report.)

The primary means of information sharing and discussion on all IUGG matters are the Bureau meetings. In 2024 the Bureau has met virtually on 15 February, 21 August, 30 October, 13 November, and 18 December. It also met face-to-face on 17 April in Vienna (at the 2024 EGU General Assembly). The Bureau dealt with urgent matters, discussed ongoing and emerging issues, and invariably addressed Strategic Planning.

In 2024 other notable achievements were the signing of the Memorandum of Understanding between the IUGG and the Abdus Salam International Centre for Theoretical Physics ([ICTP](#)) to continue the cooperation in geosciences education (which started in 2011), and to sign up for new initiatives in support of the International Decade of Sciences for Sustainable Development ([IDSSD](#)), 2024-2033.

In November 2024 we sensed “dark clouds on the horizon”. At the time of writing of this President’s Message (April 2025), we are now seeing that the election of the new President of the United States of America is having a very negative impact on scientific research, science-based decision-making and science agendas in the USA, as well as on international science. This is especially the case for the Earth, Environmental and Climate Sciences. The year 2025 is likely to be a turbulent one for the International Union of Geodesy and Geophysics.

Chris Rizos

IUGG ACTIVITIES

IUGG SECRETARIAT

The [IUGG Secretariat](#) is located at the GFZ Helmholtz Centre for Geosciences. The Secretariat is managed by the IUGG Secretary General Alexander Rudloff and the IUGG Executive Secretary Franz Kuglitsch, and supported by Katrin Gundrum. The Secretariat is responsible for implementing the day-to-day operations of IUGG; this includes (i) maintenance of daily correspondence and communication with IUGG National Committees, Adhering Organizations, Union Associations, Executive and Financial Committees, Union Commissions, Committees, Partner Organizations, and others; (ii) maintenance of IUGG electronic databases and technical documents; (iii) supervision of the IUGG webmaster and preparation of updates for the IUGG website and social media in timely fashion; (iv) development of IUGG Yearbooks and Annual Reports; (v) negotiations with companies for production of IUGG-related publications, medals, pins etc.; (vi) publication of the IUGG E-Journal (monthly issues); (vii) assistance in technical screening of IUGG grant applications, medal and awards nominations; (viii) preparation work for IUGG General Assemblies, Council, Executive Committee, and Bureau Meetings; and some other activities.

The IUGG Secretariat is co-sponsored by the **GFZ** and the **German Research Foundation (DFG)**. IUGG thanks the GFZ and DFG for the financial support of the Secretariat.

IUGG Yearbook. The Secretariat maintains the data related to the IUGG and its Association and produce annually a Yearbook which is available [here](#). By the decision of the IUGG Bureau only the current Yearbook should be linked to the IUGG website.

IUGG website and social media. The [IUGG website](#) maintained and regularly updated by the IUGG webmaster Jan Schubert. To learn more about IUGG and to keep individuals updated on Union's activities, the IUGG Secretariat maintains social media accounts on Facebook, Flickr, Twitter, and YouTube.

IUGG Electronic Journal. The [E-Journal](#), an informal newsletter, was published and distributed monthly keeping IUGG Member National Committees informed about the activities of IUGG, its Associations and Commissions, and the actions of the IUGG Secretariat. Also, the journal publishes feature articles, news from the International Science Council (ISC), news and reports related to IUGG scientific programs and co-sponsored scientific meetings, and a calendar of scientific meetings.

STATUTES AND BY-LAWS

In 2017, the IUGG Bureau started a process to reformat the IUGG Statutes and By-Laws to make reading and understanding easier, without changing the content. On 19 April 2024, the IUGG Council approved the reformatted version of the Statutes and By-Laws, which can be downloaded [here](#).

Our special thanks for this tremendous job goes to the members of the IUGG Statutes and By-Laws Committee including Charles Fierz (Chair), Charles Barton, Jeffrey Freymueller, and Ajay Manglik.

Also, IUGG would like to thank the Council Delegates and the Association Officers for their valuable support and contributions to the further development of our Union.

2024 SCIENTIFIC MEETINGS UNDER THE UMBRELLA OF IUGG

The IUGG, through its Associations, Commissions, and other sub-entities, organizes and co-sponsors numerous scientific meetings with many thousand participants each year. In 2024, a total of 67 scientific meetings were organized under the umbrella of IUGG. Meeting reports are published regularly in the [IUGG E-Journals](#), our monthly newsletter.

January

- 15-25, IACS, Mount Ruapehu, New Zealand, [Girls on Ice Aotearoa](#)

February

- 11-17, IAVCEI, La Antigua, Guatemala, [Cities on Volcanoes 12](#)
- 25-2 March, IACS, Sodankyla, Finland, [8th Snow Science Winter School](#)

March

- 3-6, IAHS, Roorkee, India, [Roorkee Water Conclave 2024](#)
- 4-8, IAG, Tsukuba, Japan, [IVS 2024. 13th General Meeting and 25th Anniversary](#)
- 6-7, IAG, Online, [Short Course on GNSS-IR for Water Level Measurements](#)
- 13-15, IUGG, IAG, IAMAS, Baltimore MD, USA, [ITU/WMO/UNEP Focus Group on AI for Natural Disaster Management](#)
- 21-29, IACS, Edinburgh, UK, [Arctic Science Summit Week](#)

April

- 1-5, IUGG, IAMAS, Cargèse, Corsica, France, [Molecular Understanding of Atmospheric Aerosols Workshop and School](#)

May

- 6-10, IUGG, IAGA, IAMAS, Ourense, Spain, [12th International Workshop on Long-Term Changes and Trends in the Atmosphere](#)
- 13-17, IUGG, IAGA, L'Aquila, Italy, [Course on Operational Space Weather Fundamentals](#)
- 20-24, IAVCEI, Nový Jičín, Czech Republic, [Volcandpark 2024](#)
- 30-1 June, IUGG, CMG, IASPEI, Mumbai, India, [Workshop on Computational Geosciences for Sustainable Development](#)

June

- 2-7, IUGG, CMG, Mumbai, India, [34th Conference on Mathematical Geophysics. Mathematical Geophysics for Sustainable Development](#)
- 2-7, IUGG, IAGA, Fredericton, New Brunswick, Canada, [The Combined ANGWIN/VCAIS Meeting](#)
- 5-7, IAG, Barcelona, Spain, [EUREF Symposium 2024](#)
- 7-17, IUGG, IACS, McCarthy AK, USA, [International Summer School in Glaciology](#)
- 17-21, IUGG, IAMAS, Hangzhou, China, [Quadrennial International Radiation Symposium 2024](#)
- 18-20, IAVCEI, Liverpool, UK, [1st International Conference on Volcanic and Igneous Plumbins Systems \(VIPS\)](#)
- 23-28, IUGG, IAG, SEDI, Great Barrington MA, USA, [18th Symposium of SEDI](#)
- 24-27, IUGG, IAMAS, La Jolla CA, USA, [International Atmospheric Rivers Conference 2024](#)
- 24-28, IUGG, IASPEI, San José, Costa Rica, [5th General Assembly of the Latin American and Caribbean Seismological Commission](#)
- 30-6 July, IAGA, Utrecht, Netherlands, [18th Castle Meeting - New trends on Paleo-, Rock- and Environmental Magnetism](#)

July

- 1-5, IAG, Bern, Switzerland, [IGS 2024 Symposium and Workshop](#)

- 7-12, IAMAS, Sapporo, Japan, [9th Global Energy and Water Exchanges \(GEWEX\) Open Science Conference](#)
- 8-12, IAMAS, Jeju, Rep. of Korea, [11th International Cloud Modeling Workshop \(ICMW\) 2024](#)
- 12-13, IUGG, IAMAS, Jeju, Rep. of Korea, [Workshop on Evaluation of Cloud Probe Processing Software](#)
- 13-14, IUGG, IAMAS, Jeju, Rep. of Korea, [Workshop on Scientific Directions for Cloud Chamber Research](#)
- 13-21, COSPAR, IUGG, Busan, Rep. of Korea, [45th COSPAR Scientific Assembly](#)
- 14-19, IAMAS, Jeju, Rep. of Korea, [International Conference on Clouds and Precipitation](#)
- 15-19, IUGG, IAMAS, Boulder CO, USA, [Quadrennial Ozone Symposium](#)
- 15-20, IUGG, IAPSO, Buenos Aires, Argentina, [Summer School 'From meso to sub-mesoscale ocean circulation structures: satellite and in-situ measurements, physical mechanisms and biological impact'](#)
- 15-21, IAVCEI, Eastern Carpathians, Romania, [2nd edition of the Carpathian Fluid Geochemistry Summer School](#)
- 20, IAMAS, Jeju, Rep. of Korea, [A Short Course on Cloud Microphysics and Radar Observations](#)
- 20-25, IAHS, UNESCO-IHP, WMO, Cairo, Egypt, [IAHS Academy](#)
- 24-25, IAHS, Eichstätt, Germany, [International Commission on Continental Erosion \(ICCE\) Symposium 2024](#)

August

- 4-11, IAGA, IAPS, Tbilisi, Georgia, [ICPS 2024. 38th International Conference of Physics Students](#)
- 25-30, IAG, Strasbourg, France, [20th Geodynamics and Earth Tides Symposium](#)

September

- 4-6, IAG, Thessaloniki, Greece, [Gravity, Geoid and Height Systems 2024](#)
- 7-13, IAGA, Beppu, Japan, [26th Electromagnetic Induction Workshop](#)
- 8-16, IAVCEI, Catania, Italy, [10th International Conference on Tephra Studies](#)
- 9-13, IAMAS, Kuala Lumpur, Malaysia, [16th International Commission on Atmospheric Chemistry and Global Pollution Symposium and 18th International Global Atmospheric Chemistry Science Conference](#)
- 16-20, IAGA, Kathmandu, Nepal, [2024 ISWI International School](#)
- 16-20, IASPEI, Corfu, Greece, [Young Seismologist Training Course](#)
- 16-21, IASPEI, IAVCEI, El Paso, La Palma, Spain, [Annual Workshop 2024 of the IASPEI/IAVCEI Inter-Association Commission on 'Volcano Seismology & Acoustics'](#)
- 18-20, IAVCEI, Catania, Italy, [6th Conference Alfred Rittmann](#)
- 22-27, IUGG, IASPEI, Corfu, Greece, [39th General Assembly of the European Seismological Commission](#)
- 25-27, IACS, Shanghai, China, [International Symposium on Geomatics, Remote Sensing and Climate Change in the Arctic, Antarctica and High Mountain Asia](#)
- 27, IAG, New York NY, USA, [Africa Rising: Shaping Our Common Future Through Geodesy](#)
- 30-4 October, IAGA, Breckenridge CO, USA, [11th VLF and ELF Remote Sensing of the Ionosphere and Magnetosphere \(VERSIM\) Meeting](#)

October

- 1-4, IAGA, Nagoya, Japan, [Joint Space Climate 9 Symposium and ISEE Symposium](#)
- 5-13, IAVCEI, Nicolosi, Italy, [9th school on Convective and Volcanic Clouds \(CVC\) detecting, monitoring and modeling](#)
- 6-9, EMSEV, IAGA, IASPEI, IAVCEI, Chania, Greece, [Electromagnetic Studies of Earthquakes and Volcanoes](#)
- 7-9, IAG, IAGA, IUGG, GFZ, Potsdam, Germany, [GGOS Topical Meeting on the Atmosphere](#)

- 10-11, IAG, Potsdam, Germany, [GGOS Days 2024](#)
- 13-17, IASPEI, UNESCO-IOC, Bodrum, Türkiye, [3rd World Conference on Meteotsunamis](#)
- 14-18, IAMAS, Nanjing, China, [ICDM Workshop 2024](#)
- 20-26, IAG, Kunming, China, [23rd International Workshop on Laser Ranging](#)
- 30-1 November, IAHS, Maseru, Lesotho, [25th WaterNet Symposium](#)
- 31-6 November, IAGA, Vassouras, Brazil, [XXth IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing](#)

November

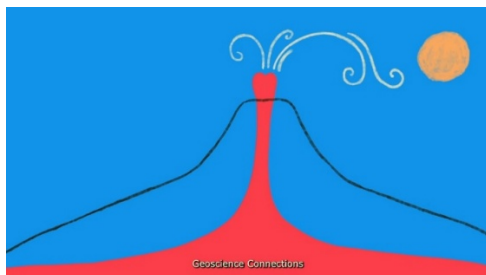
- 3-7, IUGG, IASPEI, Belek, Türkiye, [15th General Assembly of the Asian Seismological Commission](#)
- 4-7, IUGG, IAHS, Florianópolis, Brazil, [9th International Water Resources Management Conference of the International Association of Hydrological Sciences; 14th International Workshop on Statistical Hydrology of the International Association of Hydrological Sciences; and 1st Encontro Brasileiro de Hidrologia Estatística](#)
- 4-8, IAVCEI, San Pedro de Atacama, Chile, [1st International Monogenetic Conference](#)
- 6-8, IAG, Manila, Philippines, [IAG Workshop on Asia Pacific Gravity, Geoid, and Vertical Datums](#)
- 10-14, IAMAS, Goa, India, [9th SOLAS Open Science Conference](#)
- 11-14, UNESCO-IOC, IUGG, Banda Aceh, Indonesia, [2nd UNESCO IOC Global Tsunami Symposium](#)
- 18-21, IAG, Bogota, Colombia, [SIRGAS 2024](#)

GENERAL ASSEMBLY 2023

The Comptes Rendus of the 28th IUGG General Assembly ([IUGG2023](#)) are now available [here](#). Thanks to all who helped to compile the proceedings of the General Assembly!



GEOSCIENCE CONNECTIONS



'[Geoscience Connections](#)' offers you a fascinating journey through the Earth's history, explained by eight early-career researchers who represent each International Association of IUGG. The timeline starts from the formation of our planet and across billions of years when humans became Earth's inhabitants. On the one hand, the intelligent human brain allowed for the development of various brilliant technologies and a complex society. On the other hand, humans have participated in the uncontrolled exploitation of natural resources, and are thought to have caused many problems to other living beings on our planet. IUGG geoscientists help us to better understand Earth processes, bring us hope for the problems humanity faces and solutions towards a more sustainable Earth.

ASSOCIATION JOURNALS

The IUGG, through some of its Associations, regularly publishes a number of peer-reviewed journals covering various topics of Earth and space sciences. All the journals are either full or hybrid open-access. Here, we would like to introduce you to the major journals of our Associations.

International Association of Geodesy (IAG)

The [Journal of Geodesy](#) is an international journal concerned with the study of scientific problems of geodesy and related interdisciplinary sciences. It presents peer-reviewed papers on theoretical or modeling studies, and on results of experiments and interpretations. In addition to original research papers, the journal includes commissioned review papers on topical subjects, occasional short notes on topics with broad significance to the readership, and special issues arising from e. g. scientific symposia or workshops. The journal covers the whole range of geodetic science and reports on theoretical and applied studies in research areas such as positioning; reference frame; geodetic networks; modeling and quality control; space geodesy; remote sensing; gravity fields, and geodynamics. The Journal of Geodesy is published by Springer. **Five year impact factor: 4.9 (2022).**



- A journal of the IAG
- An international journal examining scientific problems of geodesy and related interdisciplinary sciences
- Covers the entire range of geodetic science
- Presents peer-reviewed papers on theoretical or modeling studies, and on results of experiments and interpretations
- Reports on theoretical and applied studies in research areas such as positioning; reference frame; geodetic networks and more
- 97% of authors who answered a survey reported that they would definitely publish or probably publish in the journal again

International Association of Hydrological Sciences (IAHS)

The [Hydrological Sciences Journal](#) is the official Journal of IAHS and provides a forum for original papers and for the exchange of information and views on significant developments in hydrology worldwide. The Hydrological Sciences Journal is published by Taylor & Francis. **Five year impact factor: 3.7 (2022).**

The scope of the journal includes:

- The hydrological cycle
- Surface water, groundwater, snow and ice, in all their physical, chemical and biological processes, their interrelationships, and their relationships to geographical factors, atmospheric processes and climate, and Earth processes including erosion and sedimentation
- Hydrological extremes and their impact
- Measurement, mathematical representation and computational aspects of hydrological processes

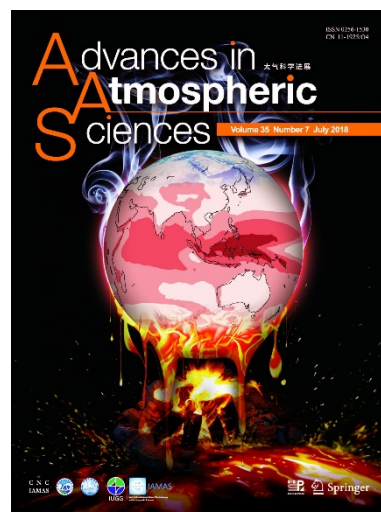


- Hydrological aspects of the use and management of water resources and their change under the influence of human activity
- Water resources systems, including the planning, engineering, management and economic aspects of applied hydrology

International Association of Meteorology and Atmospheric Sciences (IAMAS)

[Advances in Atmospheric Sciences](#), launched in 1984, aims to rapidly publish the latest achievements and developments on the dynamics, physics and chemistry of the Earth's atmosphere and ocean. It also aims to rapidly publish potentially high influential papers on the atmospheres of other planets and on earth system dynamics in which the atmosphere and/or ocean are involved.

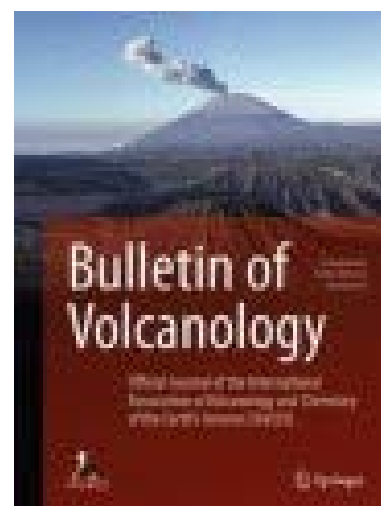
Papers cover the subject areas including but not limited to atmospheric and oceanic theories, modelling and observations; weather and general circulation systems, numerical weather prediction, climate dynamics; satellite meteorology, remote sensing, air chemistry and the boundary layer, clouds and precipitation; earth system dynamics, particularly on interactions of the atmosphere and ocean with the biosphere, the cryosphere, and the anthroposphere. The journal encourages studies seeking universal and generalized laws from local and specific phenomena.



Advances in Atmospheric Sciences is sponsored by the Chinese Committee for IAMAS, the Institute of Atmospheric Physics at Chinese Academy of Sciences and Chinese Meteorological Society. It is the associated journal of IAMAS. **Five year impact factor: 4.7 (2022).**

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

The [Bulletin of Volcanology](#) was founded in 1922, as Bulletin Volcanologique, and is the official journal of the IAVCEI. The Bulletin of Volcanology publishes papers on volcanoes, their products, their eruptive behaviour, and their hazards. Papers aimed at understanding the deeper structure of volcanoes, and the evolution of magmatic systems using geochemical, petrological, and geophysical techniques are also published. Material is published in four sections: Review Articles; Research Articles; Short Scientific Communications; and a Forum that provides for discussion of controversial issues and for comment and reply on previously published Articles and Communications. The Bulletin of Volcanology is published by Springer. **Five year impact factor: 2.9 (2022).**



IUGG GRANTS PROGRAM 2024-2025

IUGG continued its Grants Program for 2024-2025, which complements the Union program of funding symposia and workshops organised or co-sponsored by Union Associations and Union Commissions. Key priority areas are defined for the Grants Program in line with IUGG overall scientific strategies:

- Creation of new knowledge in Earth and space sciences.
- Dissemination of knowledge, data and information on geophysics and geodesy.
- Geoscience for sustainable development.
- Geoscience and policy interface.
- Geoscience education and outreach in developing countries.

For 2024-2025, IUGG awarded grants to the following projects:

- ***The GNSS enhancement to Tsunami Early Warning Systems (GeTEWS) Oceania 2024 Workshop*** (a joint project between GRC, IAG, and IAVCEI);
- ***Kyoto Landslide Commitment 2020*** (a joint project between GRC, IAG, IAPSO, IASPEI, and IAVCEI);
- ***2025 GIA Workshop: Advancing Models and Geodetic Constraints*** (a joint project between IACS, IAG, IASPEI, and SEDI);
- ***Precise height datum for Africa towards an international height datum (AFRHTD)*** (a joint project between IAG and IASPEI);
- ***ECSNet: the IUGG Early-Career Scientists Network*** (a joint project between IAGA, IACS, IAG, IAHS, IAMAS, IASPEI, and IAVCEI);
- ***Characterisation of the ionized atmosphere in terms of essential variables*** (a joint project between IAGA and IAG); and
- ***The infra-gravity wave initiative*** (a joint project between IAPSO, IACS, and CCEC)

More information about the awarded projects can be found [here](#).

COOPERATION WITH THE ABDUS SALAM INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS (ICTP)

IUGG and the Abdus Salam International Centre for Theoretical Physics ([ICTP](#)) will continue cooperating in geoscience education. On 21 May 2024, ICTP Director Atish Dabholkar and IUGG Secretary General Alexander Rudloff signed a Memorandum of Understanding (MoU) to promote educational programs related to geodesy and geophysics for 2024-2027. The agreement encourages collaboration in the organisation of advanced schools/workshops in geodesy and geophysics at ICTP in Trieste, Italy, at ICTP-EAIFR in Kigali, Rwanda, and other low- and middle-income countries.



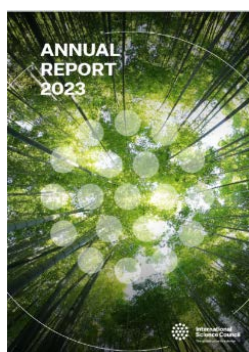
Atish Dabholkar (left), ICTP Director, and Alexander Rudloff (right), IUGG Secretary General, signing the MoU between ICTP and IUGG (Photo credit: ICTP)

Founded in 1964 by the late Nobel Laureate Abdus Salam and co-sponsored by UNESCO, IAEA, and the Italian government, the ICTP seeks to accomplish its mandate by providing scientists from developing countries with the continuing education and skills that they need to enjoy long and productive careers. ICTP has been a major force in stemming the scientific brain drain from the Global South. The impact of ICTP extends well beyond the Centre's facilities to virtually every corner of the Earth. The Earth System Physics (ESP) Section of ICTP studies a wide spectrum of the Earth-system, from its fluid components (oceans and the atmosphere) to the planet's

interior. In 2011, IUGG and ICTP agreed to enhance geophysical and geodetic education and science collaboration and signed the first MoU to promote educational programs related to geodesy and geophysics for 2012-2015. In 2015, 2019, and 2024 further MoU were signed to extend the cooperation between IUGG and ICTP. More information about the IUGG sponsored activities can be found [here](#).

COOPERATION WITH THE INTERNATIONAL SCIENCE COUNCIL (ISC)

ISC Annual Report 2023



The International Science Council's ([ISC](#)) 2023 Annual Report is now available [here](#). The report summarises all of the ISC's major activities in 2023, as well as those of its affiliated bodies, and includes the ISC's financial reporting for the year.

IRDR Scientific Committee: New Members

New members of the [Scientific Committee](#) for the Integrated Research on Disaster Risk ([IRDR](#)) programme have been appointed by the ISC.

The committee provides scientific guidance for IRDR to deliver on its mission to mobilise science for the reduction of all types of disaster risk, building resilience and reducing vulnerability by integrating risk science with climate change adaptation and mitigation and sustainable development.

To achieve this mission, the IRDR will bring together expertise from sciences, technologies, engineering and more to improve knowledge and understanding of risk and uncertainty that hamper progress toward inclusive, safe and sustainable development; to promote innovation in research and action and effective solutions in Disaster Risk Reduction (DRR); and to build institutional capacity required under various socio-economic and cultural settings and development contexts for risk-informed sustainable development.

The 15 members of the committee represent different regions of the world and scientific domains, providing a broad range of expertise to support the IRDR objectives. Among the members are the following scientists who have been active in IUGG:

Alik Ismail-Zadeh (Germany), IUGG Secretary General 2007-2017 and Chair of the Union Commission on Mathematical Geophysics (CMG), since 2019; **Timothy Melbourne** (USA), Chair of the IAG/GGOS Focus Area 'Geohazards Monitoring' since 2023, and **Jaime Urrutia Fucugauchi** (Mexico), President of the IUGG National Committee for Mexico 2003-2007.

COOPERATION WITH INTERNATIONAL AND INTERGOVERNMENTAL ORGANIZATIONS

IUGG partners with the Standing Committee for Gender Equality in Science



In order to promote gender equality in science, a number of [international organisations](#) established the Standing Committee for Gender Equality in Science ([SCGES](#)). SCGES aims to support women and girls to get access to science education, opportunities and equal treatments in their careers. SCGES (i) helps its partners to promote gender equality within their organisations, (ii) follows the progress of the implementation by partners of the [recommendations of the Gender Gap in Science Project](#), (iii) approves proposals for new partners to join SCGES, (iv) endorses [projects and initiatives](#) to promote gender equality in science proposed to it by partners, and (v) facilitates communication among partners, for instance by developing and maintaining its website.

The IUGG representatives to SCGES are Andrew Mackintosh and Athena Coustenis (deputy), who also serve as IUGG Bureau Members (2023-2027).

IUGG supports the International Decade of Sciences for Sustainable Development 2024-2033 (IDSSD)

The IUGG signed a Memorandum of Understanding (MoU) with the International Union of Pure and Applied Physics ([IUPAP](#)) for the Activation Phase of [The Earth-Humanity Coalition Sciences for Equitable Wellbeing on a Healthy Planet](#), enabling the International Decade of Sciences for Sustainable Development 2024-2033 (IDSSD).

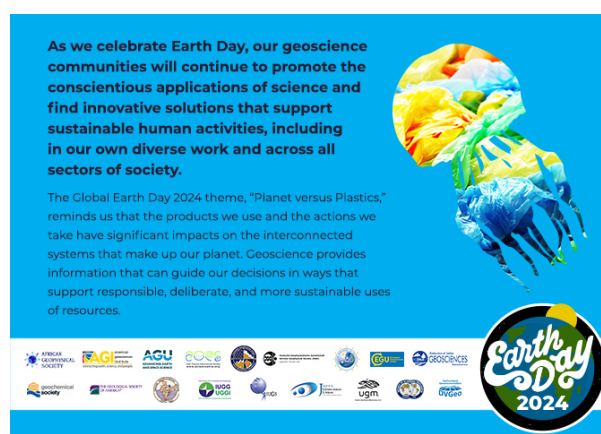
With the signing of this MoU, IUGG reaffirms its commitment to joining and actively contributing to the objectives of the Coalition.



The IDSSD builds upon the legacy of the International Year of Basic Sciences for Sustainable Development 2022 ([IYBSSD](#)). IUGG was a founding partner of IYBSSD.

Global Geoscience Societies

IUGG celebrated Earth Day on 22 April 2024 together with its partners and published the following statement.



IUGG at the EGU General Assembly in Vienna, 14-19 April 2024



The IUGG Bureau was active in several ways at the recently concluded EGU conference in Vienna: One highlight was the Great Debate on the EGU, organised jointly with AGU, GSL and IUGS: ["How can geoscience unions and societies effectively integrate science into global policy decisions?"](#) (see photos, credits: Megan O'Donnell, GSL). Guests on the panel were Tasmin Edwards from King's College London (UK), Alessandro Allegra from the European Commission in Brussels, Belgium, Joel Gill from Geology for Global Development and Cardiff University (UK), and Vanessa McBride [Online] from the International Science Council (ISC) in Paris, France. It was a lively and stimulating discussion with interesting points of experience and views including interaction with the plenary. The debate was moderated by Elena Robinson (AGU) and Alex Rudloff (IUGG), with strong support from Megan O'Donnell (GSL).

Further activities included an IUGG Bureau Meeting, meetings with the AGU and EGU leadership, and an exchange with the key persons of the IUGG2027 bid from Incheon, Rep. of Korea.

IUGG at the Ocean Decade Conference in Barcelona, 10-12 April 2024

In April 2024, three years after the start of the UN Decade of Ocean Science for Sustainable Development (2021-2030), the Ocean Decade community and its partners were called to celebrate achievements and set joint priorities for the future of the Decade. Hosted by Spain, and co-organised with UNESCO's Intergovernmental Oceanographic Commission (IOC/UNESCO) in close collaboration with the Region of Catalonia and the Barcelona City Council, the 2024 Ocean Decade Conference took place from 10 to 12 April 2024 in the city of Barcelona, Spain. The event was attended by around 1,500 participants from 124 countries.



Alexander Rudloff, IUGG Secretary General, attending the 2024 Ocean Decade Conference

As a result draft white papers were presented, prepared by ten Working Groups, corresponding with the ten Challenges of the Ocean Decade. These white papers prioritise generating knowledge for science-based solutions to e.g., biodiversity conservation, climate change, food security, a sustainable ocean economy, pollution, and natural hazards. The major outcome of the meeting is reflected in the Barcelona Stament. For further information please refer to the Ocean Decade [website](#).

The third UN Ocean Conference, will be held in Nice, France, in June 2025.

The IUGG was represented by its Secretary General.

IUGG at the COSPAR Scientific Assembly 2024 in Busan, 13-21 July 2024



Preparations for the IUGG General Assembly 2027 (IUGG2027) in Incheon, Republic of Korea, are ongoing. At the COSPAR Scientific Assembly 2024 (COSPAR2024) in Busan, Rep. of Korea, Mioara Manda, IUGG President-Elect, had the chance to meet with Sang-Mook Lee, President of the IUGG National Committee for the Republic of Korea and Justine Ahn from MWNetworks, who organised an exhibition booth to advertise IUGG2027.

IUGG and IAG are official sponsors of COSPAR2024.

Justine Ahn from MWNetworks (left), Mioara Manda, IUGG President-Elect (middle), and Sang-Mook Lee, President of the IUGG National Committee for the Rep. of Korea (right), at the exhibition booth

IUGG at the Geological Society of India's Annual Convention 2024 in Dharwad, 26-28 November 2024

In late November 2024, Mioara Manda (IUGG President-Elect), Anny Cazenave (IUGG Fellow) and Kathy Whaler (IUGG President 2019-2023) travelled to India, IUGG member since 1947, at the invitation of Harsh Gupta (IUGG President 2011-2015). At the Geological Society of India's Annual Convention and International Seminar on 'Plate Tectonics, Sedimentation and Metallogeny through Time' in Dharwad, Mioara and Anny were awarded Honorary Fellowship and all three gave invited presentations.



Mioara Manda, Harsh Gupta, Kathy Whaler, and Anny Cazenave

IUGG at the AGU Fall Meeting 2024 in Washington, 9-3 December 2024

Preparations for the IUGG General Assembly 2027 (IUGG2027) in Incheon, Republic of Korea, and the Scientific Assembly 2025 are ongoing. At the AGU Fall Meeting 2024 (AGU2024) in Washington, D.C., USA, IUGG together with C-IN (conference organizer) organized an exhibition booth.



Tomas Maxa (C-IN), Franz Kuglitsch (IUGG Executive Secretary), Mioara Manda (IUGG President-Elect), Alexander Rudloff (IUGG Secretary General), and Harald Schuh (Chair of the IUGG2023 Local Organizing Committee), at the exhibition booth

IUGG MEMBER COUNTRIES

IUGG AUSTRIA – Quadrennial Report 2019-2023 of the National Committee



The Austrian National Committee of IUGG ([ÖNK](#)) is pleased to present its quadrennial report 2019-2023, which can be downloaded [here](#).

The ÖNK meets every year, usually for two days. This involves an exchange of information between the eight associations. In addition, a special topic is set at every meeting, which is discussed in a lecture or as part of an excursion, such as:

- 2019: Principles and current developments in metrology
- 2020: The effect of Corona-Lockdowns on seismic noise
- 2021: Sentinel-1 for fully automated worldwide flood monitoring
- 2022: Recent research at the [Conrad Observatory](#)
- 2023: Education in Geoinformatics at [ZGIS Salzburg](#)

More information on past meetings can be found [here](#).

There was also a meeting with Chris Rizos, IUGG President (2023-2027), in Vienna in 2022, during which the challenges of our areas of specialisation/specific fields were addressed.

With the easing of travel restrictions after the COVID-19 pandemic, in-person IUGG and Association meetings, summer schools and more resumed in 2022. Austrian scientists have been active in organising and participating in these meetings.

I take this opportunity to thank my fellow National Delegates of the International Associations, as well as Franz Blauensteiner as our secretary, for the work they have done to promote the IUGG.

Wolfgang Lenhardt, President of the IUGG National Committee for Austria

IUGG ITALY – Annual Report 2023 of the National Committee



The Italian National Committee of IUGG is pleased to present its annual report 2023, which can be downloaded [here](#) (in Italian [here](#)).

In addition, also the annual reports of the [IACS](#), [IAGA](#), [IAHS](#), [IAMAS](#), [IAPSO](#), and [IASPEI](#) National Correspondents are now available.

All the reports of the Italian National Research Council ([CNR](#)) related to International Scientific Organisations can be found [here](#).

Fausto Guzzetti, President of the IUGG National Committee for Italy

IUGG BOLIVIA – Report on ‘Crustal Deformations below the Central Andes’



On behalf of the IUGG National Committee for Bolivia, I would like to refer you to our study on ‘[Crustal Deformations below the Central Andes](#)’. If you are working in this field or interested in collaboration, please contact me [here](#).

Jose L. Telleria-Geiger, President of the IUGG National Committee
for Bolivia

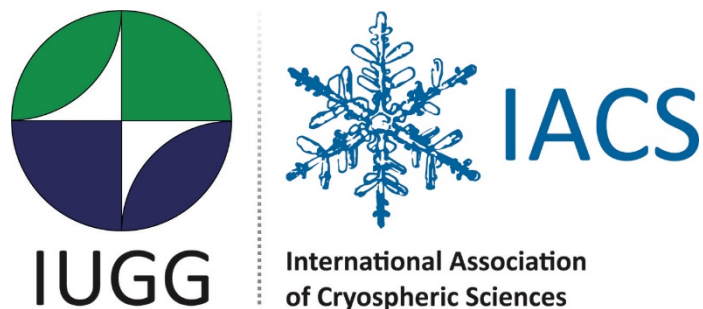
ACTIVITIES OF THE UNION ASSOCIATIONS

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 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)

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)



IACS website: www.cryosphericciences.org

INTRODUCTION

The International Association for Cryospheric Sciences (IACS) is the Association of the International Union of Geodesy and Geophysics (IUGG) concerned with snow and ice science and provides expert advice on cryospheric issues to governmental and non-governmental organisations. The objectives of IACS are to:

- promote studies of cryospheric subsystems of the Earth and solar system;
- encourage research in the above subjects by members of the cryospheric community, national and international institutions and programmes, and individual countries through collaboration and international coordination;
- provide an opportunity on an international basis for discussion and publication of the results of the above research;
- promote education and public awareness on the cryosphere, and facilitate the standardisation of measurement or collection of data on cryospheric systems and of the analysis, archiving and publication of such data;
- promote and support diversity, inclusion and equality within the field of cryospheric science, including but not limited to career stage, gender, racial and ethnic identities, and geographic origin.

ADMINISTRATION

To run the day-to-day business of IACS, an Executive Committee consisting of the President, Secretary General and President-Elect holds monthly teleconferences in which all Bureau members are welcome to join.

As 2024 was a year without an IACS assembly, the Annual Bureau Meeting was held online on 26 June 2024, split into two sessions to allow for maximum participation of IACS officers in different time zones. No Bureau elections were due in 2024, but Ji-Woong Yang (Laboratoire des Sciences du Climat et de l'Environnement, France) was appointed as the Deputy Head of the Cryosphere, Atmosphere and Climate Division (deputies can be nominated by a Division Head and approved by a Bureau vote).



The 2023-2027 IACS Bureau at IUGG 2023 Berlin.

Back row, left to right: Mohd. Farooq Azam, Rebecca Mott, Anaïs Orsi, Andrew Mackintosh, Regine Hock, Richard Essery, Christine Schøtt Hvidberg

Front row, left to right: Minghu Ding, Liss M. Andreassen, Ted Scambos, Sophie Nowicki, Mathieu Morlighem

Inset, left to right: Sandra Barreira, Alex Fraser, Lauren Vargo, Vincent Vionnet, Ji-Woong Yang

ACTIVITIES

IACS communications

The IACS homepage (<https://cryosphericssciences.org/>) is hosted at the World Glacier Monitoring Service in Zurich. IACS newsletters feature announcements and reports of IACS activities (<https://cryosphericssciences.org/newsletter/>), and announcements are posted on social media. Four newsletters were published in 2024. The IACS Bureau decided to stop posting on X and now has Bluesky (<https://bsky.app/profile/iacscryo.bsky.social>) and LinkedIn (<https://www.linkedin.com/company/100993124>) accounts.

IACS had a pod at AGU 2024 for advertising activities.

IACS Working and Standing Groups

IACS facilitates the transfer of research methods and explores new avenues in Cryospheric science through Standing Groups and Working Groups devoted to a theme or subject and composed of experts in the particular field of study. Two IACS Working Groups were extended for a year to finish their work in 2024: the working Group on the Randolph Glacier Inventory (RGI) and the Regional Assessments of Glacier Mass Change (RAGMAC) Working Group. Two new Working Groups began their four-year terms in 2024:

- The Working Group on Dynamic Processes in the Marginal Ice Zone aims to enhance understanding through research on sea ice physical and biogeochemical processes, wave-ice interaction and atmosphere-ocean-ice-snow feedbacks;
- The Working Group on Delineation of Glaciers, Ice Sheets and Ice Sheet Basins has been commissioned to develop community standards and methods for mass change estimation that avoid under- or over-counting peripheral ice masses categorized as glaciers or as parts of ice sheets.

The IACS/IPA Standing Group on Glacier and Permafrost Hazards in High Mountains (GAPHAZ) aims to:

- improve international scientific communication on glacier and permafrost hazards;
- compile knowledge related to glacier and permafrost hazards in high mountains;
- work towards greater transfer of information and improved communication between the scientific and governmental communities;
- signpost sources of advice to international and national agencies, responsible authorities and private companies;
- act as a focal point for information for international media during relevant crises.

GAPHAZ appointed a new Secretary in 2024 and worked on defining activities for 2024-2025.

IACS is part of the Global Terrestrial Network for Glaciers (GTN-G) Steering Committee. GTN-G is a framework for internationally coordinated monitoring of glaciers jointly run by the US National Snow and Ice Data Center (NSIDC), the Global Land Ice Measurements from Space (GLIMS) initiative, and the World Glacier Monitoring Service (WGMS).

IACS Joint Commissions

Joint Commissions with other IUGG Associations aim to foster collaboration and coordination on topics of overlapping interests. IACS currently has three Joint Commissions:

- the IACS-IAIG Joint Commission on Cryospheric Deformation has been involved in planning for the 2025 Glacial Isostatic Adjustment Workshop in British Columbia, Canada;
- the IACS-IAPSO Joint Commission on Ice-Ocean Interactions hosted an online workshop on ice-ocean interactions in October 2024 and presented the case for a Framework for Observing and Modelling Ice-Ocean Interactions in Antarctica at Ocean Sciences 2024 and EGU 2024;
- the IACS-IAVCEI Joint Commission on Volcano-Ice Interactions appointed new IACS leadership and hosted three online seminars in 2024;
- discussion of forming an IACS-IAHS joint commission has begun.

Joint bodies

The objectives of the IACS/Mountain Research Initiative/World Meteorological Organization Global Cryosphere Watch Joint Body on the status of mountain snow cover (JB-SMSC) are to:

- provide robust information on mountain snow cover changes at a global scale;
- better understand processes of snow accumulation and ablation based on existing modelling and observational studies;
- open access to snow data for the research community and operational capacity building for understanding mountain snow cover changes and impacts.

JB-SMSC held a side meeting at EGU 2024 and presented progress on an interactive dashboard for visualizing an inventory of in-situ measurements of mountain snow cover (<https://jb-smsc.github.io/inventory/#map>).

Co-sponsored events and activities

IACS supports events that are of interest to the cryospheric community. Our contributions typically cover part of the travel costs for early career scientists and scientists from developing countries attending cryosphere related events, or IACS awards for scientists in these categories. Funding requests must be submitted for deadlines on 1 April and 1 October, and at least two months prior to the event that is to be supported. Proposers are informed of decisions approximately two weeks after the deadline. IACS co-sponsored nine activities in 2024:

- [International Symposium on Geomatics, Remote Sensing and Climate Change in the Arctic, Antarctica and High Mountain Asia](#), Shanghai, China
- Third [Machine Learning in Glaciology Workshop](#), Finse Alpine Research Center, Norway
- [International Summer School in Glaciology](#), McCarthy, Alaska
- [Juneau Icefield Research Program](#), Alaska
- APECS ECR Social Networking Event at ASSW 2024, Edinburgh, UK
- Polar Educators International and IACS [Frozen Frontier through the Lens: A Polar Research Exhibition](#) at ASSW 2024, Edinburgh, UK
- [Workshop on Cryospheric Observation and Modelling for climate change adaptation](#), El Chaltén, Argentina
- [Girls* on Ice Aotearoa](#), Mount Ruapehu, New Zealand
- Eighth [Snow Science Winter School](#), Sodankyla, Finland.

FUTURE ACTIVITIES

The [BACO-25](#) IAMAS-IACS-IAPSO Joint Assembly 2025 (BACO-25) will be held in Busan, Republic of Korea, on 20-25 July 2025. The IACS President and Secretary General will attend IUGG business meetings and the site visit for EGU2027 in Incheon before the Joint Assembly.

The Secretary General is representing IACS on the steering committee for the fourth International Conference on Arctic Research Planning (Boulder, USA, 25-28 March 2025).

The United Nations International Year of Glaciers' Preservation (IYGP) will be launched on 21 January 2025 and World Glacier Day will be celebrated for the first time on 21 March 2025. The IACS President is a member of the IYGP Advisory Board and is associate chief editor of a special paper collection on Vanishing Glaciers as a contribution to IYGP.

IACS will be a partner in the [Climate and Cryosphere Open Science Conference 2026](#) in Wellington, New Zealand, and is seeking a host and partner organisations for an assembly in 2029.

IACS has submitted an application on behalf of IUGG and all of its constituent Associations to join the International Polar Year 2032-33 Planning Group.

Richard Essery, IACS Secretary General

International Association of Geodesy (IAG)

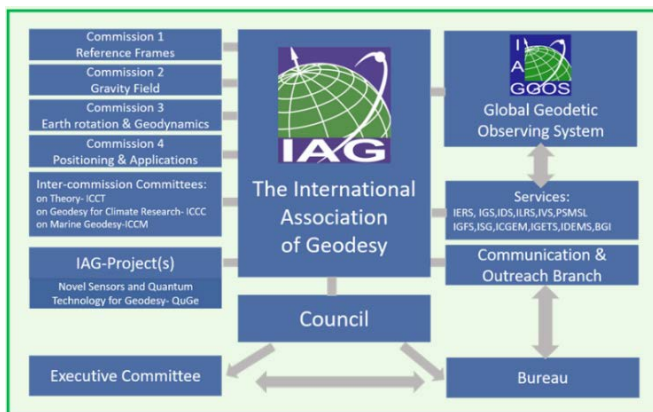


IAG website: www.iag-aig.org

INTRODUCTION

The structure of IAG comprises several components: four Commissions (1. Reference Frames, 2. Gravity Field, 3. Earth Rotation and Geodynamics, and 4. Positioning and Applications), the Inter-Commission Committees on Theory (ICCT), Climate Research (ICCC), and Marine Geodesy (ICCM), as well as the IAG Project Novel Sensors and Quantum Technology for Geodesy (QuGe). Furthermore, IAG has twelve International Scientific Services, the Global Geodetic Observing System (GGOS), and the Communication and Outreach Branch (COB).

The Commissions are divided into Sub-commissions, Study Groups and Working Groups. The Inter-Commission Committees (ICCs) and the Project investigate scientific geodesy-related topics in close cooperation with the Commissions and GGOS. The Services generate scientific geodetic products by maintaining – amongst others – Operations, Data, Analysis and Combination Centres.



The Global Geodetic Observing System is a component of IAG that works closely together with the IAG Services to provide the geodetic infrastructure necessary for monitoring the Earth system and allow global change research. GGOS ensures the basis to maintain a stable, accurate and reliable global geodetic reference frame, which is crucial for all Earth observations. In order to do so, GGOS postulated the requirements in view of the terrestrial reference frame to be 1mm and 0.1mm/y.

The COB covers external communication, public information and outreach activities, in particular via the IAG website, social media channels and the monthly Newsletters. Additionally, the COB is responsible for the promotional activities of the IAG and the communication with its members.

The IAG General Assembly, the Council, the Executive Committee, the Bureau, and the Office carry out the administration of IAG. The Council is composed of the delegates appointed by the national adhering bodies. The Bureau comprises the IAG President, Vice-President and Secretary General. The Executive Committee consists of 17 elected members. The IAG Office assists the Secretary General in fulfilling her duties and is dealing with the day-to-day business.

ADMINISTRATION

IAG Executive Committee (EC)

The EC 2023-2027 held its 3rd meeting online on February 13, 2024. The 4th and 5th meetings took place as in-person meetings (with hybrid option) in Vienna (Austria), on April 14, 2024, and in Thessaloniki (Greece), on September 3, 2024, respectively.

IAG Bureau

The IAG Bureau (President, Vice-President, and Secretary General) discussed day-to-day decisions through e-mail exchanges and regular monthly online meetings. In April 2024, an assistant secretary from BEV (Austria) joined the IAG Bureau.

ACTIVITIES

IAG Scientific Assembly 2025

IAG has been intensively organising its quadrennial Scientific Assembly, which will be held in-person in Rimini (Italy) on September 1-5, 2025. Under the theme “Geodesy for a changing environment” 14 symposia have been announced, covering the scientific scope of all IAG components as well as the broader importance of geodesy in data management, outreach and networking with science and policy. Thus, the Assembly sets geodesists’ focus on the impacts of environmental variations, extreme events of different nature and on developing strategies to capture the onset of abrupt changes in the Earth system. Four Highlight Sessions covering topics on the forefront of geodetic research and with high impact on society will be a special part of the assembly.

Activities of Commissions, Inter-Commission Committees, GGOS and Services

- IVS 13th General Meeting and 25th Anniversary, March 4-8, 2024, Tsukuba, Japan
- EUREF Symposium 2024, June 5-7, 2024, Barcelona, Spain
- IGS Symposium and Workshop, July 1-5, 2024, Bern, Switzerland
- Joint Webinar on Advancing Geodesy and Navigation with Quantum Sensors, July 29, 2024
- 20th Geodynamics and Earth Tides Symposium (G-ETS 2024), August 25-30, 2024, Strasbourg, France, 89 participants, 98 contributions
- Gravity, Geoid and Height Systems 2024 (GGHS2024), September 4-6, 2024, Thessaloniki, Greece, 130 participants (38% ECS), 125 contributions
- GGOS Topical Meeting on the Atmosphere, October 7-9, 2024, Potsdam, Germany, 76 participants (47% ECS), 56 contributions
- GGOS Days 2024, October 10-11, 2024, Potsdam, Germany, hybrid, 60 in-person, 182 online participants (in both cases 32% ECS)
- 23rd International Workshop on Laser Ranging, October 20-26, 2024, Kunming, China
- IAG Workshop on Asia Pacific Gravity, Geoid, and Vertical Datums, November 6-8, 2024, Manila, Philippines
- SIRGAS 2024 Symposium, November 18-21, 2024, Bogotá, Colombia

The IAG entities maintain their web pages (accessible also via the IAG Homepage) where more details can be found.

Communication and Outreach Branch (COB)

The main activities of the COB included the publication of the monthly Newsletter, GIM International and the maintenance of the IAG Homepage (www.iag-aig.org). A full re-design of the IAG web presence started in cooperation with the GGOS Coordinating Office (and future IAG Secretariat). The transition to the new web site is foreseen to be finalized in 2025.

IAG Task Force on Inclusion

IAG has adopted the IUGG definition of Early Career Scientists (ECS) and is organizing ECS gathering activities at IAG symposia (examples at GGHS 2024 and at GGOS Days 2024).

The Task Force on Inclusion, aiming at increasing diversity in terms of gender, geographical distribution, generation / career stage (“3G”) took several measures in 2024:

- Statistics on the 3G distribution are being collected within IAG structure and among participants of IAG meetings;
- Establishing IAG ECS email lists, preparing a dedicated website;
- Supporting future IAG events in under-represented regions like Africa, Latin America, Asia-Pacific;
- Contacts with geodesy students’ organisations to network among young geodesists and connect them to IAG.

The Task Force regularly reported in the EC meetings and in the Geodesist’s Handbook 2024.



ECS social gathering at GGHS2024 in Thessaloniki, September 6, 2024 (Courtesy Athina Peidou)

Cooperation with the United Nations

The IAG has actively cooperated with the Subcommittee on Geodesy of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) and its newly established Global Geodetic Centre of Excellence (UN-GGCE).

Several IAG officers and individuals strongly linked to IAG took part in the “Expert Consultation on Strengthening the Global Geodesy Supply Chain” that was held at the UN campus in Bonn on April 22-23, 2024.

Apart from providing valuable input and feedback to the UN-GGCE during the so-called listening tours, IAG officers have substantially contributed to the UN-GGCE “1st Joint Development Plan for Global Geodesy”. Furthermore, IAG is supporting the activities of UN-GGCE to move towards Multi-/bilateral Memorandum and Agreements for making the geodesy supply chain more robust and sustainable.

On September 27, 2024 a Geodesy Day took place in the frame of the Science Summit at the UN General Assembly 79. The Geodesy Day was a hybrid meeting in New York, with 209 participants, focussed on Africa: *Africa Rising: Shaping our Common Future through Geodesy. Implementing UN General Assembly Resolution A/RES/69/266 "A Global Geodetic Reference Frame for Sustainable Development"*. IAG Officers were conveners, panelists and gave keynote speeches at this high-impact meeting, which brought together geodetic scientists with policymakers.

Publications

The IAG Newsletter was published monthly online and is accessible via the IAG website.

The Geodesist’s Handbook 2024 was edited by the IAG Office.

Based on the agreement with Springer Verlag, IAG Symposia Series will be open access, and free of charge to the Symposia participants. Two books were published in 2024 in the IAG Symposia Series:

- 1) Volume 156: Gravity, Positioning and Reference Frames: Proceedings of the IAG Symposia - GGHS2022: Gravity, Geoid, and Height Systems 2022, Austin, TX, USA, September 12 - 14, 2022; IAG Commission 4: Positioning and Applications, Potsdam, Germany, September 5 - 8, 2022; REFAG2022: Reference Frames for Applications in Geosciences, Thessaloniki, Greece, October 17 - 20, 2022.
- 2) Volume 155: X Hotine-Marussi Symposium on Mathematical Geodesy: Proceedings of the Symposium in Milan, Italy, June 13-17, 2022.

The number of submissions to the Journal of Geodesy (JoG) remained well above 300, with about a 30% acceptance rate. The impact factor of the Journal is 3.9 (2023). The JoG is ranked 12th among 101 journals in the category of geochemistry and geophysics.

IAG membership

By the end of 2024, there were a total of 232 members, of which 12 were students and 46 were retired members. Students and retired members are free of the annual fee.

Awards

IAG Travel Awards to participate in IAG-sponsored Symposia, Schools or other scientific meetings were granted to 13 persons (12 of which were Early Career Scientists), in total of 15400 €.

Obituaries

The following obituary was published in the IAG Newsletter: Oscar Colombo (1942-2024).

FUTURE ACTIVITIES

IAG Secretariat at BEV

GGOS and COB together with the IAG Office have been reorganising the outreach and web activities in order to improve the visibility of IAG and its Services and to avoid duplication of work with the GGOS Coordinating Office. This re-structuring is one of the largest internal efforts during the period 2023-2027.

Building on the recent success of the GGOS Coordination Office hosted at the Federal Office of Metrology and Surveying (BEV – Bundesamt für Eich- und Vermessungswesen) in Austria, the IAG proposed the establishment of an IAG Secretariat at BEV - an idea warmly embraced by all parties involved. The future IAG Secretariat will take over long-term tasks of the IAG Secretary General (IAG Office) as well as all IAG public relations currently performed by the COB. It is planned to formalize the establishment of the IAG Secretariat by the corresponding changes in the IAG Bylaws to be ready at the next IUGG General Assembly in 2027, subject to final confirmation by the IAG Council.



At BEV, on April 16, 2024, after signing the MoU, which initiated the establishment of the future IAG Secretariat. From left to right: Wernher Hoffmann (BEV President), Harald Schuh (past IAG President), Richard Gross (IAG President), Franz Blauensteiner (Head of Reference Systems Department, BEV), Daniela Thaller (IAG Secretary General), Martin Sehnal (Director of GGOS Coordination Office and prospective Executive Secretary at IAG Secretariat, BEV), Peter Teunissen (IAG Vice-President)

Supporting UN-GGCE activities

In 2025, IAG will be further contributing to the recent UN-GGCE initiative for the Multilateral Memorandum of Understanding on Strengthening the Global Geodesy Supply Chain. IAG is involved in the upcoming UN-GGCE Capacity Development Workshops in different regions all over the world. Furthermore, IAG will take actions to fulfill the goals defined in the 1st Joint Development Plan.

Daniela Thaller, IAG Secretary General

International Association of Geomagnetism and Aeronomy (IAGA)



International Association
of Geomagnetism and Aeronomy

IAGA website: www.iaga-aiga.org

INTRODUCTION

IAGA, the International Association of Geomagnetism and Aeronomy (AIGA - Association Internationale de Géomagnétisme et d'Aéronomie) is one of the eight Associations of the International Union of Geodesy and Geophysics (IUGG). It is a non-governmental body funded through the subscriptions paid to IUGG by its Member Countries. IAGA can trace its origins to the Commission for Terrestrial Magnetism and Atmospheric Electricity, part of the International Meteorological Organisation, which was established in 1873.

IAGA is the premier international scientific association promoting the study of terrestrial and planetary magnetism, and space physics. IAGA is concerned with the understanding and knowledge that result from studies of the magnetic and electrical properties of:

- the Earth's core, mantle and crust
- the middle and upper atmosphere
- the ionosphere and the magnetosphere
- the Sun, the solar wind, the planets and interplanetary bodies.

As a basis for these studies the IAGA community is also strongly involved in present and past magnetic field observations from ground observatories, magnetic surveys, space missions and paleomagnetic data measured in laboratories.

More information on IAGA is provided on its websites: <http://www.iaga-aiga.org>.

ADMINISTRATION

IAGA is organised in six Divisions and four Inter-divisional Commissions. Each Division may form Working Groups in specialised topics and elects officers to run the business of the Working Groups. The terms of office are linked to the IUGG General Assemblies. Lists of the Division/Inter-divisional Commission leadership and the Working Group names and officers can be found on the following website: <http://www.iaga-aiga.org/about/>. There were no changes to the IAGA Divisions, Commissions and Working Groups in 2024.

IAGA is administered by an Executive Committee (EC) on behalf of IUGG Member Countries in accordance with the IAGA's Statutes and By-Laws. The current Executive Committee members are:

President: Andrew Yau (Canada)

Vice-presidents: Kusumita Arora (India), Klaus Spitzer (Germany)

Secretary General: Monika Korte (Germany)

Treasurer: Aude Chambodut (France)

Members: Anna Kelbert (USA), Michael Kosch (South Africa), Dominika Niezabitowska (Sweden, Early Career Representative), Masahito Nosé (Japan), Katia Pinheiro (Brazil), Pornchai Supnithi (Thailand), Ricardo Trindade (Brazil)

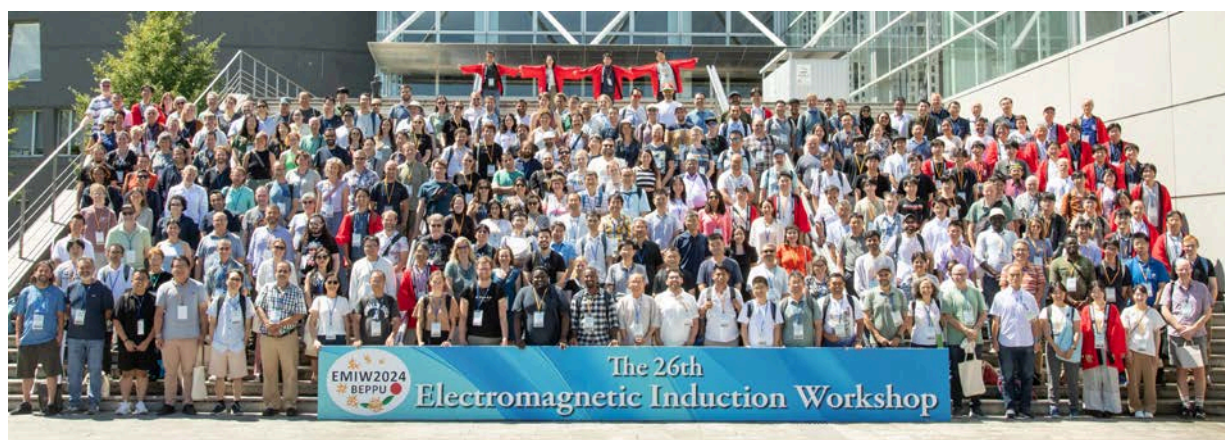
The EC had a virtual meeting in June 2024 and communicated frequently by e-mail.

IAGA communicates with Member Countries through National Correspondents nominated by appropriate National Bodies. Member Countries are represented at IAGA Assemblies by accredited Chief Delegates who may vote on matters, according to the voting rules set out in the Statutes and By-Laws, at the Conference of Delegates. More information on all aspects of IAGA administration can be found at: <http://www.iaga-aiga.org/about/>.

ACTIVITIES

Sponsored topical meetings

In 2024, IAGA sponsored ten topical meetings, both from traditional workshops series and new ones and international courses. They are listed below.



Participants of the IAGA sponsored 26th Electromagnetic Induction Workshop

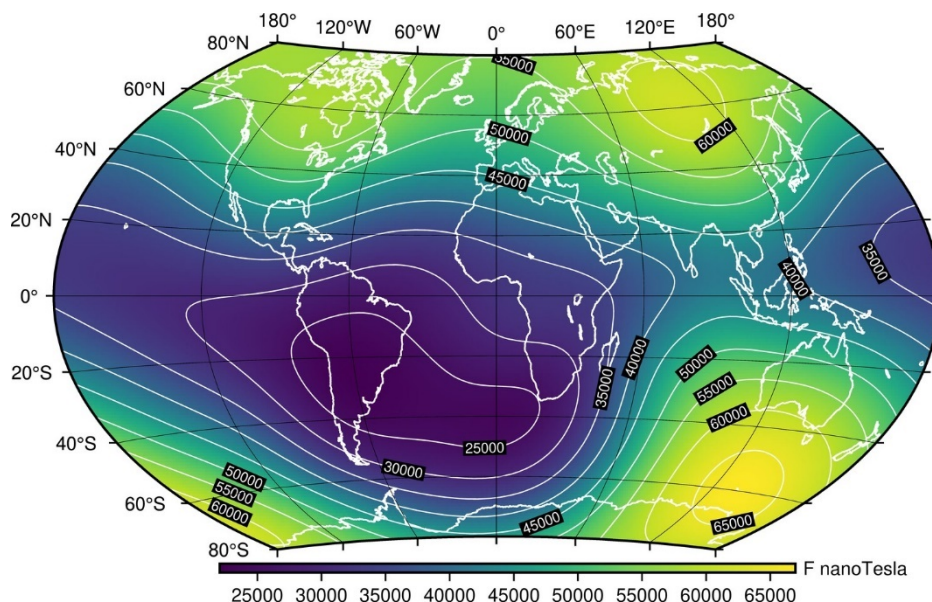
Workshop title	Location	Dates
TRENDS 2024 12 th International Workshop on Long-Term Changes and Trends in the Atmosphere	Ourense, Galicia, Spain	May 6 – 10
Course on Operational Space Weather Fundamentals	L'Aquila, Italy	May 13 – 17
9 th IAGA/ICMA/SCOSTEP Workshop on Vertical Coupling in the Atmosphere-Ionosphere System and the	Fredericton, NB, Canada	June 2 – 7

6th ANtarctic Gravity Wave Instrument Network Meeting		
18 th Castle Meeting - New trends on Paleo-, Rock- and Environmental Magnetism	Utrecht, Netherlands	June 30 – July 5
COSPAR 45 th Scientific Assembly	Busan, South Korea	July 13 – 21
EMIW 2024 - 26th EM Induction Workshop	Beppu, Japan	September 7 – 13
2024 ISWI International School	Kathmandu, Nepal	September 16 – 20
11 th VLF and ELF Remote Sensing of the Ionosphere and Magnetosphere (VERSIM) Meeting	Breckenridge, USA	Sep 30 – Oct 4
Joint Symposium of Space Climate 9 Symposium and ISEE Symposium	Nagoya, Japan	October 1-4
GGOS Topical Meeting on the Atmosphere	Potsdam, Germany	October 7-9
XX th IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing	Vassouras, Brazil	Oct 31 – Nov 6

Outreach projects

In 2023, IAGA established a new opportunity for outreach project funding, as announced at <https://iaga-aiga.org/grants/outreach/>. The first project, entitled “#askIAGA”, was funded in 2024 for a duration of up to 2 years. It aims at providing outreach material suitable for social media use to enhance the public understanding of the science covered by IAGA.

International Geomagnetic Reference Field 14th generation



Map of the geomagnetic field intensity at Earth's surface at the beginning of 2025 according to IGRF-14

As every 5 years, a dedicated task group of IAGA Working Group V-MOD updated the International Geomagnetic Reference Field (IGRF). It was released in November 2024. The update to the 14th generation includes the DGRF2020, i.e. the updated and definitive model for 2020, IGRF2025, i.e. the new model for 2025 and SV2025-30, i.e. the linear secular variation forecast to extrapolate IGRF2025

to any date up to 2030, when the next generation of IGRF will be released. Creating IGRF-14 was a truly international effort, and the three products were derived from a combination of 14 to 18 candidate models submitted by groups from all over the world. The IGRF and more information about it are available at <https://www.ncei.noaa.gov/products/international-geomagnetic-reference-field> . For the first time, all candidate models and a record of the analysis process are openly provided in a GitHub repository: <https://github.com/IAGA-VMOD/IGRF14eval> .

Publications and outreach

The latest issue of the annual IAGA Newsletter, nr. 61, was distributed in December 2024. It can be downloaded from the IAGA website <http://www.iaga-aiga.org/publications>. Current versions of a IAGA Flyer and Poster are also available on the website.

IAGA operates websites at <http://www.iaga-aiga.org> and is active on the following social media

Facebook: www.facebook.com/IAGAandAIGA/

X (former Twitter): www.twitter.com/IAGA_AIGA

Instagram: www.instagram.com/iaga_aiga/

Blog: <https://iaga-aiga.blogspot.com/>

Linkedin: <https://hr.linkedin.com/company/iaga-international-association-of-geomagnetism-and-aeronomy>

FUTURE ACTIVITIES

Meetings and workshops

Current and future activities include the preparation of the 2025 IAGA-IASPEI Joint Assembly in Lisbon, Portugal, and the 7th IAGA School to be held in the week before this Assembly, for the first time with a day of joint activities with the IASPEI School. IAGA will also be involved in a few topical meetings in 2025.

Monika Korte, IAGA Secretary General

International Association of Hydrological Sciences (IAHS)



IAHS website: <http://iahs.info>

INTRODUCTION

The year 2024 saw a considerable number of IAHS activities herewith summarized in this annual report. In 2024 IAHS continued to promote and facilitate hydrological research and publications across the globe through the various commissions, working groups and regional committees. The HELPING scientific decade (2023-2032) gained momentum and conducted several activities in the course of the year. In 2024, 836 applications were received with 581 applications originating from financial disadvantaged countries. As of 31st December 2024, the total membership of IAHS was 11960 representing 166 countries.

ADMINISTRATION

IAHS held monthly management team meetings throughout 2024. Two IAHS Bureau meetings were convened online on the 13th of June 2024 and the 5th of December 2024. No changes in the administration of commissions were recorded in 2024. On the other hand, the new IAHS scientific decades HELPING saw the identification of three themes leaders (Justin Sheffield (UK), Ana Mijic (UK) and Adeyemi Olusola (Canada)) and the establishment of 29 working groups. The Editor-in-chief of the IAHS Digital Water Globe, Eduardo Mario Mendiondo (Brazil) took also full charge in the year 2024 and appointed six Associate Editors. Later in the year the new HELPING Chair Thom Bogaard was introduced.

Below the International Commissions, Working Groups and regional Initiatives of IAHS that were active in the year 2024:

- International Commission on Continental Erosion (ICCE)
- International Commission on the Coupled Land-Atmosphere System (ICCLAS)
- International Commission on Human-Water Feedbacks
- International Commission on Groundwater (ICGW)
- International Commission on Remote Sensing (ICRS)
- International Commission on Snow and Ice Hydrology (ICSIH)
- International Commission on Statistical Hydrology (ICSH)
- International Commission on Surface Water (ICSW)
- International Commission on Tracers (ICT)
- International Commission on Water Quality (ICWQ)
- International Commission on Water Resources Systems (ICWRS)

- Working Group MOXXI on Measuring and Observing in the XXIst century
- Working Group CandHY on Citizens AND Hydrology
- Working Group for History of Hydrology
- Working Group for Unsolved Problems in Hydrology (UPH)
- Early Career Scientists Committee
- Africa Regional Committee
- Latin America Regional Committee

ACTIVITIES

IAHS conducted a number of activities in 2024 through the Management team, international commissions, working groups, regional committees, the publication unit and members of the newly launched HELPING decade. In January 2024, the 4th International Conference on snow hydrology was convened in Grenoble, France. The Hydrological Sciences Journal (HSJ) sent a call for manuscript for special issues on Karst hydrology, Emerging hydro-climatic dynamics and human–water interactions in a changing world, and Twenty-first century hydrological challenges and opportunities in Africa. The [HSJ, Vol 69, Issue 1](#) was published in January 2024, the History of Hydrology Working Group launched the [History of Hydrology Interviews on YouTube](#). [HSJ, Vol 69, Issue 2](#) was published in February.

In March 2024, IAHS organised a side-event on HELPING and participated in [Roorkee Water Conclave](#), India. On the 22nd of March, IAHS celebrated World Water Day 2024 under the theme: 'Leveraging Water for Peace', in collaboration with the Birmingham Water Research Centre online events by presenting the HELPING decade. The [IAHS Digital Water Globe](#) editorial team was created in the same month. [HSJ, Vol 69, Issues 3 and 4](#) were published.

April 2024, saw the organisation of splinter meetings on the IAHS HELPING Decades and the IAHS Digital Water Globe at EGU 2024. ICT, ICHWF, Africa Regional Committee, Early Career Committee (ECC) and History of Hydrology Working Group hosted splinter meetings at EGU 2024 in Vienna, Austria. [HSJ, Vol 69, Issues 5 and 6](#) were published. In May, the IAHS Early Career Committee (ECC) introduced a blog series. [PIAHS, Vol 385, IAHS2022 – Hydrological sciences in the Anthropocene](#) was published together with [HSJ, Vol 69, Issues 7 and 8](#). In June 2024, IAHS was represented at [AOGS 2024](#) in Gangwon-do, Korea where Early Career Committee hosted splinter meetings. IAHS President, Berit Arheimer, IAHS Secretary General Jean-Marie Kileshye Onema and other IAHS members attend the 26th Session of the Intergovernmental Council of the Intergovernmental Hydrological Programme in UNESCO Headquarters, Paris, France. [HSJ, Vol 69, Issue 9](#) was published in July.

The second half of the year 2024 saw The IAHS Digital Water Globe being quoted in UNESCO Open Hydrology. [IAHS co-organised Summer School](#): Runoff Predictions in Ungauged Basins (PUB) in Vienna, Austria was convened. [ICCE hosted a Symposium 2024](#) in Eichstatt-Ingolstadt, Germany. Two IAHS SYSTA travel awards were extended for the [ICCE Symposium 2024](#) in Eichstatt-Ingolstadt, Germany. [HSJ, Vol 69, Issue 10](#) was published. In August 2024, the [HELPING Opinion Paper was published in HSJ](#). [PIAHS, Vol 386, ICFM9 – River Basin Disaster Resilience and Sustainability by All](#) and [HSJ, Vol 69, Issues 11 and 12](#) were published.

In September 2024, Martin Addi of Ghana won the [IAHS Tison Award](#) for an outstanding paper published by IAHS in the HSJ. IAHS co-organised the [15th Annual Catchment Science Summer School](#) in Birmingham, England. During the same month, IAHS presented the HELPING initiative at the Penman lecture of the British Hydrological Society in Oxford, England.

ICT established the Tracer Application on Noble Gas Nuclides, TANGR meeting as an IAHS-ICT series meeting. ICWRS published a paper "[Historical synthesis of the International Commission on Water Resources Systems](#)" in HSJ. ICHWF hosted a Topical workshop on Drought by DiTA group in Geneva,

and published a paper on “[Drought as a Continuum](#)” in NHESS in the Drought, society & ecosystem special issue. [HSJ, Vol 69, Issues 13 and 14](#) were published.

In October 2024, Archana Sarkar, IAHS Vice-President, was appointed as Chair for the [IAHS EDI Task Force](#). IAHS participated and co-convened the [25th WaterNet/WARFSA/GWP-SA Symposium](#) in Maseru, Lesotho. The HELPING Working Group "REHYDRATE" hosted an online workshop. The HELPING Working Group "Drought in the Anthropocene" organised the scientific contribution to the Drought Resilience meeting on national drought policy, and co-created recommendations for drought action for the upcoming decade. The HELPING Working "Group Acceptance of Nature-based solutions" organised the 2024 Yellow River Ecohydrology Forum.

[HSJ, Vol 69, Issues 15 and 16](#) were published.

In November 2024, the joint conference between IAHS International Commissions and IAHS Latin America Committee held the [9th IWRM / 14th STAHY / 1st EBHE Conference](#) in Florianópolis, Brazil. The following [awards and medals](#) were presented at the official ceremony in Florianópolis, Brazil, in November: Dooge Medal was awarded to Prof. Lena Merete Tallaksen, the Volker Medal was awarded to Dr. Heidi Kreibich, and the 2024 IAHS Falkenmark Award was awarded to Dr Djim Diongue. IUGG grant supported the organisation of this event in Florianópolis, Brazil.

Four [IAHS SYSTA travel awards](#) were extended for the 9th IWRM / 14th STAHY / 1st EBHE conference in Florianópolis, Brazil.



Group Photo: 9th IWRM / 14th STAHY / 1st EBHE conference in Florianópolis, Brazil- Nov 2024

[6th ICWQ Workshop 2024](#) in Guangzhou, China took place. IAHS members attended the [Irish National Hydrology Conference 2024](#) in Athlone, Ireland.

HELPING Online Conference 2024 was convened on the 26th of November 2024 with over 100 participants. ICSW published a paper "[Seven strategies to leverage water for peace and foster sustainable and just water management for all](#)" in Nature Water.

[PIAHS, Vol 387, Mountain Hydrology and Cryosphere](#) was published.

In December 2024, the new HELPING Chair: Prof Thom Bogaard was introduced. The [IAHS Frances Watkins Memorial Award](#) for 2024 was awarded to John R. Nimmo for his HSJ article entitled New insights on the origin of the Richardson-Richards equation.

[HSJ Volume 69 \(2024\) featured articles](#) were published.

The HELPING Working Group "Acceptance of Nature-based solutions" organised the 7th International EcoSummit with the theme "Eco-civilization for a Sustainable and Desirable Future." This is one of the premier conferences in the field of ecology, held every four years.

The HELPING Working Group "Stepwise Ecological Restoration of Watersheds" organised the Global Partnership for Ecosystem Services (ESP) Asia Training Series: Integrated Ecosystem Services Assessment, and authored a monograph entitled "Theory and Application of Ecological Restoration" (in Chinese), constructed a theoretical framework of stepwise ecological restoration and promoted it.

The HELPING Working Group "[Hydrologic Design: Solutions and Communications](#)" published a paper in HSJ.

FUTURE ACTIVITIES

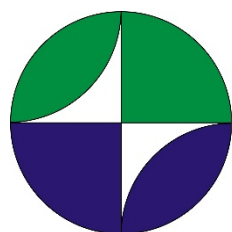
IAHS workplan for the year 2025 includes statutory activities like the Board meeting with IAHS LTD, two bureau meetings for the year and the monthly management team meetings.

IAHS is scheduled to convene the Scientific assembly from the 5 to the 10th of October 2025 in Roorkee, India ([IAHS 2025 | XIIth Scientific Assembly of the International Association of Hydrological Sciences \(IAHS 2025\)](#)). The joint awards IAHS-UNESCO-WMO for 2025 (Dooge and Volker medals) will be presented during the Scientific Assembly. Similarly, the other prizes (Falkenmark and Tison) will be presented. An IAHS academy is scheduled to take place in the course of 2026 with China considered to be the potential host. SYSTA awards for early careers researchers of financially disadvantaged countries will be extended for the Scientific Assembly, the 2nd International Sociohydrology conference (<https://ishc2025.t.u-tokyo.ac.jp/>) and the IAHS academy.

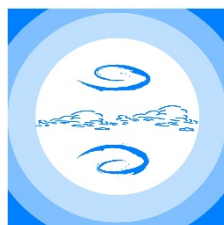
In terms of outreach, IAHS will be represented during the EGU meeting in Vienna. IAHS will continue in 2025 to partners with UN agencies under the umbrella of UN water family. With UNESCO-IHP 50-year celebrations as one of the major events. Please refer to the IAHS [website](#) for more information.

Jean-Marie Kileshye Onema, IAHS Secretary General

International Association of Meteorology and Atmospheric Sciences (IAMAS)



IUGG



IAMAS

International Association of Meteorology
and Atmospheric Sciences

IAMAS website: www.iamas.org

INTRODUCTION

IAMAS is a research association of the International Union of Geodesy and Geophysics (IUGG) that focuses on all aspects of the gaseous envelope around the Earth and other planets. The main work is conducted, coordinated, and communicated through IAMAS's 10 International Commissions, which, in alphabetical order, are the:

- International Commission on Atmospheric Chemistry and Global Pollution (iCACGP),
- International Commission on Atmospheric Electricity (ICAE),
- International Commission on Climate (ICCL),
- International Commission on Clouds and Precipitation (ICCP) including the Committee on Nucleation and Atmospheric Aerosols (CNAA),
- International Commission on Dynamical Meteorology (ICDM),
- International Commission on the Middle Atmosphere (ICMA),
- International Commission on Planetary Atmospheres and their Evolution (ICPAE),
- International Commission on Polar Meteorology (ICPM),
- International Commission on Tropical Meteorology (ICTM)*
- International Ozone Commission (IOC), and
- International Radiation Commission (IRC).

All the international commissions, and IAMAS as a whole, play a leading role in global coordination, communication and discussion of the latest research through organizing and participating in a wide range of scientific meetings that are open to all scientists.

* The IAMAS Bureau has supported activities supporting the development of a new commission on Tropical Meteorology. The formal decision on forming such a commission will be taken by the IAMAS Delegates at their 2025 Assembly.

ADMINISTRATION

IAMAS Bureau Meetings

Monthly meetings are held virtually by zoom. The bureau regularly invites different members-at-large and commission presidents to attend these meetings. An in-person meeting was held 21-23 May, 2024 at the Ecole Nationale Supérieure, département des géosciences, Paris. The next in-person meeting of the Bureau will be held 20-25 July, 2025 during our Assembly in Busan, Korea

Funding

IAMAS held an open call for proposals for activities to be undertaken in 2025 by its commissions with a deadline in October 2024 for consideration both by IAMAS directly, and forwarding to IUGG for its consideration. As a result, IUGG funded six proposals totalling 50,000 USD and IAMAS funded another fifteen proposals totalling 86,800 USD. The next open call for proposals from our commissions will have a deadline in September, 2025 in alignment with the planned IUGG proposal deadline.

The list of funded IUGG and IAMAS activities in 2024 is as follows.

IAMAS Early Career Committee:

- Support for ECR participation in BACO2025, Busan, Korea, 20-25 July 2025

ICACGP:

- 21st Global Emission Initiative (GEIA) Conference, Abidjan, Ivory Coast, 9-11 July, 2025
- iCACGP Business Meeting at BACO25, Busan, Korea, 20-25 July 2025
- ACAM Workshop and Training School, Bali, Indonesia, 9-13 June 2025
- IGAC-iCACGP ECR online conference, 2025

ICAE:

- International Symposium on Lightning Physics and Lightning Meteorology, Beijing, China, 23-26 April 2025
- ICAE Commission Business Meeting, San Francisco, December 2025

ICCL:

- Climate and Cryosphere Open Science Conference, Wellington, New Zealand, Feb 9-12, 2026 (clic2026.com)

ICCP:

- ICCP Business Meeting at BACO25, Busan, Korea, 20-25 July 2025
- Eleventh WMO Scientific Conference on Weather Modification, Pune, India November 2025

ICDM:

- Resilience to Natural Hazards through AI Solutions, Frascati, Italy, May 2025
- Explaining and Predicting Earth System Change Science, Busan, Korea 15-18 July 2025
- Current and future role of dynamic meteorology, Busan, Korea 28-29 July 2025

ICMA:

- Improved simulations of the stratosphere for better predictions of weather, climate and extreme events (a joint QBOi-SNAPSI-QUOCA activity workshop), Cambridge, UK, 24-28 March 2025
- Workshop on 'Data Science for Weather and Climate Research' and Training School on 'Climate Data Analysis and AI in the Global South (AI4Climate)', Dakar, Senegal, Oct/Nov 2025

ICPAE:

- Titan: 20-year anniversary of Cassini-Huygens mission, Paris, France, 2025
- Round-table discussion for international research of planetary atmospheres at BACO25, Busan, Korea, 20-25 July 2025

ICPM:

- Workshop on Antarctic Meteorology and Climate, Incheon, Korea 16-18 July 2025
- ICPM 2024 Business Meeting at BACO25, Busan, Korea, 20-25 July 2025

ICTM*:

- Preparatory Commission planning meeting and lectures on “Advances and challenges in the prediction of tropical weather extremes”, Pune, India, 12 March 2025 followed by series of panel discussions as part of the preparatory meeting for BACO

IRC:

- Early Career Researcher participation in BACO2025, Busan, Korea, 20-25 July 2025

IAMAS EXECUTIVE COMMITTEE 2023-2027

President: Andrea Flossmann FRANCE

Vice-Presidents:

- John Burrows GERMANY
- Mary Scholes SOUTH AFRICA

Past President: Joyce E. Penner USA

Secretary General: Keith Alverson CANADA

Members at large:

- Neil Holbrook AUSTRALIA
- Mu Mu CHINA
- Marilyn Raphael USA
- Tirusha Thambiran SOUTH AFRICA
- John Turner UK

Early Career Scientist Representative: Jing Li CHINA

Commission Presidents (Ex Officio Members): See listings below

IAMAS COMMISSIONS**Atmospheric Chemistry and Global Pollution (ICACGP)**

Website: www.icacgp.org

President: Mary Barth USA

Vice-Presidents:

- Hugh Coe UK
- Christian George FRANCE
- Judith Hoelzemann BRAZIL
- Hiroshi Tanimoto JAPAN

Atmospheric Electricity (ICAE)

Website: <http://www.icae-iamas.org/>

President: Xiushu Qie CHINA

Secretary: Weitao Lyu CHINA

Climate (ICCL)

Website: <https://www.iamas.org/commissions/iccl/>

President: Jianping Li CHINA

Secretary: Qiuzhen Yin BELGIUM

Clouds and Precipitation (ICCP)

Website: www.iccp-iamas.org

President: Greg McFarquhar USA

Vice-President: Luis Ladino Moreno MEXICO

Secretary-Treasurer: Martina Krämer GERMANY

ICCP - Committee on Nucleation and Atmospheric Aerosols (CNAA)

Website: www.icnaa.org

Chair: Markku Kulmala FINLAND

Secretary: Katrianne Lehtipalo FINLAND

Dynamic Meteorology (ICDM)

Website: <http://icdm.atm.ucdavis.edu/ICDM.html>

President: Thomas Spengler NORWAY

Vice President: Tim Woollings UK

Secretary: Craig Bishop AUSTRALIA

Past President: Richard Grotjahn US

Middle Atmosphere (ICMA)

Website: <https://www.iamas.org/icma/>

President: Natalia Calvo SPAIN

Vice-President: Seok-Woo Son KOREA, Rep. of

Ozone (IO3C)

Website: www.io3c.org

President: Irina Petropavlovskikh, USA

Vice Presidents:

- Nathaniel Livesey, USA
- Valérie Thouret, France

Secretary: Corinne Vigouroux, Belgium

Planetary Atmospheres and their Evolution (ICPAE)

Website: <http://iamas.org/icpae>

President: Ann Carine Vandaele BELGIUM

Secretary: Yeon Joo Lee KOREA, Rep. of

Vice Secretary: Giuliano Liuzzi ITALY

Polar Meteorology (ICPM)

Website: www.iamas.org/icpm/

President: Matthew Lazzara USA

Secretary: Tracy Moffat-Griffin UK

Radiation (IRC)

Website: <https://www.iamas.org/irc/>

President: Manfred Wendisch GERMANY

Vice President: Hajime Okamoto JAPAN

Secretary General: Christine Chiu USA

ACTIVITIES AND PLANNED FUTURE ACTIVITIES

Events

IAMAS held its last General Assembly during IUGG-2023, in the CityCube Conference Centre, Berlin, Germany, July 2023.

The next IAMAS General Assembly will be held jointly with IAPSO and IACS from 20-25 July 2025 in Busan Korea.

Awards

The last [IAMAS Early Career Medal was awarded in 2023 at the IUGG general assembly in Berlin to Dr. Cheng Sun](#) for his outstanding contributions to the understanding of Atlantic climate variability.

The IAMAS Early Career Medal for 2025 will be awarded at BACO25 in Busan, Korea.

International Commission Reports

Early Career Scientist Committee

In 2024, the major activity of the IAMAS ECS committee was to plan for the ECS event to be held during BACO-25. We had several meetings and made the final plan for two events: one ice breaking social event in the evening of the first day, and one scientific editing/proposal writing workshop during lunch.

We also made major progress by contributing to the “ECSNet: the IUGG Early-Career Scientists Network”. Jing Li was interviewed by Katia Pinheiro, the ECSNet PI about “How to get involved in IAMAS”. The interview contents were posted on the IUGG ECS webpage.

We continue to expand our network by advertising IAMAS and our committee on various occasions, including EGU, IRS meeting, IGAC conference, etc.

The ECS working group in the Chinese National Committee of IAMAS also held a series of activities in China. We co-organized the Fengyun meteorology satellite workshop, Typhoon and storm workshop between Taiwan and Chinese Mainland, and held the planetary atmosphere graduate student summer school.

iCACGP (<http://www.icacgp.org/>)

2024 iCACGP activities

On 8 September 2024, the international Commission on Atmospheric Chemistry and Global Pollution (iCACGP) held its annual business meeting in Kuala Lumpur, Malaysia the day before the start of the 2024 iCACGP-IGAC Joint Conference. The International Global Atmospheric Chemistry (IGAC) Project is a project supported by iCACGP and Future Earth to facilitate atmospheric chemistry research towards a sustainable world.

The first session of the business meeting was joint with the IGAC Scientific Steering Committee (SSC) and the IGAC/iCACGP Early Career Researcher (ECR) SSC, totaling 28 attendees. The group discussed past and future Early Career Research activities as well as IGAC/iCACGP positioning statements, the format of future conferences, and the role of long-term measurements in atmospheric chemistry research. During the afternoon session, the iCACGP members provided updates on current and future activities in their region and discussed outcomes of past visioning sessions and next steps for strategic planning for iCACGP.

The 2024 iCACGP-IGAC Joint Conference, held 9 - 13 September 2024, included sessions on air quality impacts, climate and weather impacts on air quality, fundamental chemistry processes, recent observation campaigns and new model developments, and atmospheric chemistry in the changing Earth system. There were two panel discussions on current challenges and future directions in atmospheric chemistry. An early career researcher program was run during the conference as well as an early career short course before the conference. There were ~400 participants at the conference.

The Surface Ocean–Lower Atmosphere Study (SOLAS) Project is another project supported by iCACGP and Future Earth to provide science coordination and capacity building. The 2024 SOLAS Science Conference was held 10-14 November 2024 in Goa, India. Themes during the conference included greenhouse gases and the oceans, air-sea interface and fluxes of mass and energy, atmospheric deposition and ocean biogeochemistry, interconnections between marine ecosystems, aerosols, and clouds, ocean biogeochemical control on atmospheric chemistry, and science & society/climate

intervention. The conference also included two integrated themes on the Indian Ocean and upwelling systems. The conference included an early career scientists event. The conference brought together approximately 250 participants from 25 countries and regions.

The iCACGP through IUGG provided support to the workshop and school on the Molecular-Level Understanding of Atmospheric Aerosols, which was held 1-5 April 2024 in Corsica. The workshop addressed challenges in understanding the formation of aerosol particles from gaseous precursors and the initial growth of these particles, the internal structure of aerosols, aerosol phase behavior, heterogeneous and multiphase (photo)chemistry, gas-surface interactions, the ability of aerosols to initiate ice and cloud nucleation, the evolution of aerosol optical properties, and the role of bioaerosols in the atmosphere.

In 2025, iCACGP is providing support for the upcoming IGAC/iCACGP online Early Career Researcher conference and the Atmospheric Composition and the Asian Monsoon (ACAM) workshop as well as the Global Emissions Initiative (GEIA) conference. The iCACGP is also convening two sessions and co-convening two other sessions at the BACO 2025 conference.

ICAE (<https://www.iamas.org/icae/>)

ICAE Activities in 2024:

- Maintenance of the formal website for ICAE (<https://www.iamas.org/icae/>).
- Online publication of two issues of ICAE newsletters.
- Maintenance of ICAE mailing list: Mailing list for ICAE Colleagues: icae-colleagues@googlegroups.com, ~430 Colleagues; Mailing list for ICAE Members: icae-members@googlegroups.com
- Organization of one ICAE session in EGU 2024.
- Organization of ICAE EC meeting during AGU2024. This ICAE EC meeting received \$1500 financial support from the IAMAS/IUGG.

Plans for ICAE in 2025:

- Preparation of 18th ICAE 2026.
- Participate in the Busan IAMAS-IACS-IAPSO Joint Assembly 2025 (BACO-25) and organize one session.
- Organize the 2025 ICAE EC meeting during AGU2025.
- Organize the 2025 International Symposium on Lightning Physics and Lightning Meteorology (ISLP&M), Beijing, China.
- Publication of two issues of ICAE newsletter.
- Maintenance of the website for ICAE.
- Update the ICAE colleague mailing list as needed.

ICCL (<https://www.iamas.org/commissions/iccl/>)

ICCL activities in 2024:

1. ICCL (co-)organized 13 symposia at the Busan BACO (IAMAS-IACS-IAPSO) Joint Assembly 2025. The titles of the symposia and the ICCL members involved are listed below:
 - IAMAS symposia
 - Joint symposia
 - M17 Atlantic Overturning Circulation: Climate Impacts and External Factors (Léon Chafik, Jianping Li)

- M18 Monsoon systems: variability, processes, predictability, change and extremes (Jianping Li)
 - M20 High resolution modelling of regional and local climate (Tomas Halenka)
- Joint symposia
 - JMP03 High-impact Weather and Climate Extremes (Neil Holbrook, Seok-Woo Son)
 - JMP04 Antarctic Bottom Water formation, variability and trends (Zhaomin Wang)
 - JMP06 Advancing air-sea flux process understanding across diverse conditions (Greg Foltz)
 - JMP07 Past climate changes and their relevance for the future (Qiuzhen Yin, Ayako Abe-Ouchi, Emilie Capron)
 - JMP08 Tropical Pacific SST Warming Patterns: Observations, Models and Impacts (Mat Collins, Leon Chafik)
 - JMP09 El Niño/Southern Oscillation and its Global and Regional Impacts (Jianping Li)
 - JMC13 Tropical-polar interactions under rapid climate change: Processes and influences (Xichen Li)
 - JMC16 Global warming driven cryospheric loss at high latitudes and altitudes and its impact on society and ecosystems (Keith Alverson)
 - JMCP18 Sub-seasonal to Decadal Prediction (S2S-S2D) (Seok-Woo Son)
 - JMCP20 Responses of Antarctic ice shelves to changing atmospheric and oceanic forcing (Zhaomin Wang)
- 2. Six new members were nominated and accepted by ICCL:
 - Ben Kravitz, Indiana University, USA
 - Cheng Sun, Beijing Normal University, China
 - Xichen Li, Institute of Atmospheric Physics of Chinese Academy of Sciences, China
 - Gregory Foltz, NOAA Atlantic Oceanographic & Meteorological Laboratory, USA
 - Jules Kajtar, National Oceanography Centre, UK
 - François Massonnet, Université catholique de Louvain, Belgium
- 3. The ICCL meeting proposal titled “Climate and Cryosphere Open Science Conference” led by Keith Alverson was submitted to the IAMAS call for proposals for activities in 2025-26 and was accepted for funding by IAMAS. The conference is scheduled to be held in Wellington, NZ, 9-12 February 2026.
- 4. The 2024 International Forum on Pacific Island Countries Response to Climate Change (PICC 2024), co-sponsored by IAMAS, was organized by Jianping Li in Qingdao, China from July 6 to 7, 2024. The forum was hosted by the Center for Ocean Carbon Neutrality (COCN) at Ocean University of China (OUC) and focused on accelerating global cooperation and developing sustainable solutions to address the impacts of climate change on Pacific Island Countries (PICs). It received over 100 delegates from more than 10 countries, including China, the United States, the United Kingdom, Spain, Korea, Fiji, and etc.
- 5. A session titled “Water cycle changes over Asia: from attribution to adaptation how to communicate advanced information on climate and hazard projections to the general public” was organized by Tosi Nakaegawa at the 9th GEWEX (Global Energy and Water EXchanges core project of the World Climate Research Programme) Open Science Conference held in Sapporo, Japan from July 7-12, 2024, co-sponsored by IAMAS.
- 6. A session titled “A Future in Flux: Climate Projections, Tropical Cyclones, and Securing Water Resources” was organized by Tosi Nakaegawa at the 9th International Engineering, Sciences and Technology Conference (IESTEC 2024) held in Panama, October 23 – 25, 2024.
- 7. The 2024 International Forum on Carbon Neutrality and Sustainable Development (CNSD 2024) was organized by Jianping Li on November 17, 2024 in Qingdao, China. Nearly 60 participants from 6 countries, including China, Italy, Spain, the United Kingdom, Nigeria and Rwanda attended the conference.

8. At EGU 2024 Assembly, 14-19 April 2024, Vienna, Austria, organized monsoon session, Session AS1.18: Monsoon systems in the past and present and under future climate change (Co-convenor Jianping Li).
9. At the AGU24 Annual Meeting (9-13 Dec 2024), Washington D.C, USA, ICCL (co-)organized 2 sessions. The titles of the sessions and the ICCL members involved are listed below:
 - Session A070: Decadal Climate Variability: Key Processes of Air-Sea Interaction, Mechanisms and Predictability (Lead Convenor: Jianping Li).
 - Session A015: Ocean-Land-Atmosphere Interactions and Extreme Weather and Climate (Jianping Li as a Co-Convenor).

ICCP (<https://www.iamas.org/iccp/>)

In 2024, the major activity of ICCP was the convening of the International Conference on Clouds and Precipitation, held at the Jeju Convention Center in Seogwipo, Jeju between 14 and 19 July 2024. This conference was the 19th in a series sponsored by the International Commission on Clouds and Precipitation (ICCP) that began in 1954 in Zurich, Switzerland and was last held in person in 2016 in Manchester, England (the 2021 meeting organized at the Indian Institute of Tropical Meteorology was held virtually). Dr. Seong Soo Yum of Yonsei University was Chair of the Local Organizing Committee, and Dr. Greg McFarquhar of the University of Oklahoma was Chair of the Scientific Steering Committee.

There were 6 introductory plenary talks in the first morning of the conference covering topics of liquid clouds, ice clouds, mixed-phase clouds, convective clouds, tropical convection and laboratory studies. For the rest of the conference, there were 192 talks split into two parallel sessions and 299 poster presentations. Overall, there were 469 attendees from 44 nations, with PR China, the United States, South Korea, Germany, India and the United Kingdom representing the countries with the greatest number of submissions. There were scientific sessions on aerosol-cloud-precipitation-radiation interactions, liquid-phase clouds, polar clouds, tropical clouds, cloud electricity, convective clouds, liquid-phase clouds, ice-phase clouds, mixed-phase clouds, ice nucleating particles and cloud condensation nuclei, fog and visibility, turbulence and entrainment, orographic clouds, ice multiplication processes, and weather modification and geoengineering. At the banquet on Thursday evening, the newest honorary member of the ICCP, Dr. Darrel Baumgardner, gave a talk on the synergism between academia and private business.

Some innovative ideas were tried at the conference. Because there were more applications for oral presentations than available slots, a double blinded review process was used to select the oral talks where the reviewers from the ICCP committee did not know the identity of the authors of the submissions they were reviewing. All participants received 10 stickers to place on the posters they thought were the best, with the 10 posters receiving the most stickers winning the “People’s Choice Poster Award” which were presented at the ICCP Banquet on Thursday evening. A Cloud Physics Family Tree was on display throughout the conference, showing the academic lineage of all those who list cloud physics as their primary discipline—some ancestry can be traced back to 1100, but only names as far back as 1800 were displayed at the ICCP. A mentoring lunch was held on Tuesday where mid-career and senior scientists sat at tables with early-career scientists and students, engaging in dialog to hear about concerns of younger scientists and offering career advice. A social program on Wednesday afternoon, a first for an ICCP conference, allowed participants to explore Jeju Island at locations such as Bijarin Forest, Eosenugsangak Trail, Gotjawal Forest, Arte Muesum, and the Cloud Chamber at the National Institute of Meteorological Studies (NIMS).

Two meetings of the ICCP Executive commission took place during the conference. At the first, 15 new members from 13 different countries were elected to the ICCP commission, with Prof. Luis Ladino elected Vice-President. At the second, the Indian Institute of Tropical Meteorology was selected as the host for the 20th ICCP conference which will take place in 2028 with Dr. Mahen Konwar as host of the Local Organizing Committee.

There were several workshops and training events occurring immediately before or after the ICCP Conference. The 11th International Cloud Modeling Workshop (ICMW) took place at Yonsei University the week before the conference and involved intercomparison of simulations performed by different investigators of 5 unique cases applying different aspects of recent modelling innovations. A Workshop on Scientific Directions for Cloud Chamber Research was conducted at NIMS the weekend before the conference, and brought together the community to discuss recent progress and future opportunities for research involving cloud chambers, including discussion of recent and future chamber designs, aerosol/cloud measurement methods for cloud chamber research, and modelling studies related to cloud chamber research. The Workshop on Evaluation of Cloud Probe Processing Software also took place at NIMS the weekend before the ICCP. The motivation for this meeting was to aid in the development, interpretation, evaluation and standardization of software packages that process data obtained by optical array probes. Prior to the workshop, a synthetic dataset that simulates the binary data collected by optical array probes was made available to workshop participants, with the meeting dedicated to intercomparing the results from different groups who ran their codes on the synthetic datasets. Directions for future intercomparisons were discussed. Finally, a Short Course on Cloud Microphysics and Radar Observations was held the day after the ICCP conference at NIMS. Course participants learned about challenges and future visions of cloud/precipitation particle initiation and growth, cutting-edge cloud remote sensing instruments and measurements, and synthesis of remote sensing observations and model simulations to improve the understanding of cloud microphysics.

In other activities, the ICCP journal club is continuing its monthly seminar series, with invited volunteer speakers giving presentations on various aspects of cloud physics. The link to register for the event is [available here](#).

In 2025, the ICCP will host symposia as part of the Busan IAMAS-IACS-IAPSO Joint Assembly (BACO2025) by sponsoring/co-sponsoring sessions on “Cloud-precipitation-aerosol studies,” “Weather modification and small-scale geoengineering: theory, practice and technology”, and “Dynamics and microphysics of moist convection.” ICCP members also have considerable interest in the 11th Conference on Weather Modification that will be held in Pune, India in November 2025.

ICDM (<https://www.iamas.org/icdm/>)

ICDM has a total of 24 members as well as 3 emeritus members from overall 13 countries. A third of the members in ICDM are women.

In 2024, ICDM organised the ICDM workshop on Linking Weather and Climate Dynamics across Scales, held at Nanjing University International Conference Center, China, 13-19 October 2024. [Workshop website](#).

The workshop was a huge success with 130 participants on site and several 100 participants following a livestreaming online in China.

ICMA (<https://www.iamas.org/icma/>)

The ICMA Business Meeting (BM) 2024 was held online on the 26th of September. Yaga Richter stepped down as ICMA member. During 2024, ICMA was preparing for BACO-25 and applied for the Middle Atmosphere Symposium to be held within BACO-25 (M10).

In 2025, ICMA will be sponsoring two workshops: a joint QBOi-SNAPSI-QUOCA activity workshop to be held on Cambridge, UK, 24-28 March on “Improved simulations of the stratosphere for better predictions of weather, climate and extreme events” and a workshop on 'Data Science for Weather and Climate Research' and Training School on 'Climate Data Analysis and AI in the Global South

(AI4Climate)', Dakar, Senegal, to be held in November 2025. Both have been supported with IUGG and IAMAS funding.

The 2025 ICMA BM will be held in Busan during BACO-25.

IO3C (<https://www.io3c.org/>)

In 2024, the IO3C organized the Quadrennial Ozone Symposium (QOS2024, hosted by the University of Colorado, Boulder, 14-20 July 2024) to share ozone-focused research findings and status of observations. The symposium had more than 220 participants (including 40 online), 7 Keynote talks, 6 Invited talks, 97 oral presentations (in 7 sessions), and 221 posters. The IO3C held a side meeting to vote in new members of the commission and discuss upcoming planning for the next four years.

Half of the IO3C commission was renewed, including the four officers. The list of new and continuing members can be found on the IO3C website.

In addition, during the QOS symposium dinner, the Commission presented three awards: One Dobson award for the most influential early career scientist publication and two Farman awards for lifetime career achievements in promoting and supporting ozone research and monitoring.

Following the multi-year IO3C tradition, on September 16th, the International Day for the Preservation of the Ozone Layer, the Commission published a press release to commemorate the anniversary of the signing of the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer and to provide the update on the recovery of the stratospheric ozone layer.

In January 2025, IO3C members had an online meeting to welcome new members and discuss activities planned for 2025. Members responded to the survey to identify ongoing collaborations with other organizations involved in ozone research, discussed pathways to increase IO3C visibility in the social media, and brainstormed methods to optimize communications.

The IO3C regularly contributes to decision making in the areas of public distribution of the data collected by observing networks that focus on the monitoring of ozone and related species, timely submission and open-assess archival of the data, reprocessing of the Dobson and Brewer ozone historic records with the IO3C-approved ozone cross-sections, ozone records homogenization (i.e. ASOP02), to name a few. The Commission shares information about its activities in the WCRP APARC and NDACC newsletters, in the WMO GAW Ozone and UV Bulletin, and on Facebook.

ICPAE (<https://www.iamas.org/icpae>)

In 2024, ICPAE organized a session at the Europlanet (EPSC) 2024 Conference in Berlin: EXOA6 - Planetary Atmospheres: a key to the evolution of Planets, which attracted a total of 7 oral contributions (1 of them invited) and 4 posters. The majority of the contributions (6 out of 11) were given by Early Career individuals, and some of them also received support by the committee.

During EPSC, ICPAE also organized a business lunch meeting to which members and interested individuals could attend. On that occasion, the idea of reforming some of the ICPAE membership rules was discussed (e.g., eliminating the 2-yr gap if someone wishes to be a continuous member), and there was a discussion about potential topics to focus on for future conference sessions and meetings. Among those, it was agreed to work on Climate, Space Weather in planetary atmospheres, Comparative atmospheric studies.

In 2024, 13 new individuals joined ICPAE as first term members.

ICPM (<https://www.iamas.org/icpm/>)

ICPM had a relatively quiet year. ICPM are sponsoring/involved with the following sessions for BACO-25:

- M11 Polar weather and climate extremes
- JMC14 Climate Change in the Polar Regions: Observing, Modelling and Predicting High Impact Transitions
- JMC15 High latitude field campaigns
- JMCP17 Natural Hazards
- M04 Cloud-Precipitation-Aerosol Studies
- M20 High resolution modelling of regional and local climate
- JCM01 Coupling between the atmosphere and snow/ice surfaces: Observations and modelling
- JMC13 Tropical-polar interactions under rapid climate change: Processes and influences

Members have attended and presented at the ICPM endorsed 19th Workshop on Antarctic Meteorology and Climate (WAMC) and the 8th Year of Polar Prediction in the Southern Hemisphere (YOPP-SH) Meeting. It was a hybrid meeting hosted by Polar Meteorology Group, Byrd Polar and Climate Research Center, The Ohio State University. The WAMC brings together those with common interests in Antarctic meteorology, climate, forecasting and related disciplines. The three-day event focused on observational networks, numerical modeling, weather forecasting, operational/logistical interests, and Antarctic meteorological and climate research from contributors around the world. Meeting website can be found here: https://polarmet.osu.edu/WAMC_2024/. The commission continued its social media presence with a recent addition of Bluesky.

ICTM*

Members are planning the ICTM commission pre BACO meeting. This includes a mini meeting with a few lectures on 12 March 2025 to launch a series of panel discussions on the relevant topics for tropical meteorology. These topics are the following

- Moist convection and parameterization of sub-grid physical processes
- Organization of convection, Tropical storms, disturbances, and extreme weather,
- Madden-Julian oscillation in theory, observations, and prediction models,
- Tropical sub-seasonal variability and its effects on extratropics,
- Monsoons and the teleconnections, ENSO, IOD, PDO, Equatorial waves and instabilities,
- The influence of remote forcing versus regional processes on the monsoon variability,
- The influence of surface-atmosphere interactions on the sub-seasonal to seasonal prediction skill in the monsoon season,
- The influence of combined climate oscillations on extremes,
- Climate modes and their impact on tropical weather and climate,
- Modelling climate sensitivity and climate change in the tropics,
- Anthropogenic effects on tropical weather and climate.

These meetings will be conducted in hybrid mode.

IRC (<https://www.iamas.org/irc/>)

The primary activities in 2024 were directed toward the organization and realization of the quadrennial symposium of the IRC, the [International Radiation Symposium 2024 \(IRS 2024\)](#) that was held in Hangzhou, China, from 17-21 June, 2024. During IRS 2024, the IRC performed its annual business meeting on June 18, 2024. Key topics of discussion during the IRC business meeting included: the financial status of the IRC, an overview of upcoming meetings, and presentations from the 12 current

IRC working groups. In addition, the new IRC officers for the 2025-2028 term were elected at this meeting. The upcoming election of IRC Commissioners for the 2025-2028 term was also discussed.

The following list comprises the Working Groups of the IRC:

1. ASA - Atmospheric Spectroscopy Applications
2. BSRN - Baseline Surface Radiation Network
3. CR - Clouds and Radiation
4. GEB - Global Energy Balance
5. ICLAS - International Coordination group for Laser Atmospheric Studies
6. IPRT - International Polarized Radiative Transfer
7. ITWG - International TOVS Working Group
8. UV - Solar UltraViolet Radiation
9. 3DRT (I3RC) - Three-Dimensional Radiative Transfer
10. HRMM - Hyperspectral Radiation: Measurements and Modelling
11. TSSI - Total and Spectral Solar Irradiance
12. MLRS - Machine Learning Applications in Remote Sensing

Annual reports, including publications, meetings, and related activities can be found on the [IRC website](#).

The IRS 2024 was the second time this symposium was held in China after the IRS 1986 in Beijing. It was also the second IRS in three years because the previous symposium, IRS 2022 in Thessaloniki, was delayed twice due to the COVID-19 pandemic. The IRC was determined to set the IRS back to its previous cadence.

IRS 2024 was organized by the School of Earth Sciences at Zhejiang University (ZJU) in partnership with the IRC and sponsored by the International Union of Geodesy and Geophysics (IUGG) and International Association of Meteorology and Atmospheric Sciences (IAMAS). Zhejiang Sanli New Century Grand Hotel provided a single convenient location for participant accommodations and all symposium sessions. Over 270 scientists from 18 countries participated in the fully in-person symposium, with 193 oral presentations and 74 posters.

IRS 2024 provided a comprehensive international forum for presenting and discussing research in atmospheric radiation and related disciplines in the following ten sessions: Topical Union Session: Current Problems in Atmospheric Radiation; Radiative Transfer Theory and Modeling; Particle Radiative Properties; General Remote Sensing; Ground-based Measurements and Field Observations; Radiation Budget and Forcing; Weather, Climate, and Environment Applications; Solar UV Radiation; China's Satellite Remote Sensing Programs; Radiation Science in the Tibet regions. Internationally renowned senior scientists, junior scientists, and students had a unique opportunity to discuss the most current scientific issues, exchange new ideas and establish far-reaching collaborations. Keynote addresses were delivered in the Topical Union Session at the start of each day.

A banquet was held on the evening of the third day at the famed Hangzhou Cuisine Museum. One of the highlights was the awards ceremony where the IRC Gold Medal and Young Scientist awards were presented. Dr. Ping Yang (Texas A&M University Distinguished Professor) received the IRC Gold Medal for his *remarkable achievements, groundbreaking research, and unwavering dedication to advancing our understanding of radiative processes in the Earth-Atmosphere system*. Dr. Jake Gristey (Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder) was presented the IRC Young Scientist Award for a *wide range of expertise, from high-resolution modeling to satellite mission design, and from pure curiosity-driven science questions to machine-learning applications*. Three additional scientists were awarded an Early Career Poster Prize, sponsored by the IAMAS-associated journal, *Advances in Atmospheric Sciences* (AAS): Stavros Vigkos (National

Observatory of Athens), Jaume Ruiz de Morales (Universitat de Girona), and Mayuki Sano (Tohoku University).

AAS also plans to publish our comprehensive meeting report of IRS 2024 and a special issue featuring select papers presented at IRS 2024.

On the afternoon of 20 June 2024, participants had the opportunity to join one of three excursions: West Lake, a World Cultural Heritage Site that had a major influence on East Asian culture between the ninth and eighteenth centuries; the Lingyin Temple, built in 328 AD during the Eastern Jin Dynasty, and one of the most significant and wealthiest Buddhist temples in the country; or Xixi Wetland Park, with a history of more than 4000 years and an abundant cultural heritage.

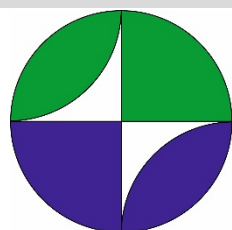
IRS 2024 was by all measures a resounding success. The IRC looks forward to inviting you to the next International Radiation Symposium in 2028!

Keith Alverson, IAMAS Secretary General

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

IAPSO website: <https://iapso-ocean.org/>

INTRODUCTION



IUGG



**International Association
for the Physical Sciences of the Oceans**

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 works mainly through 1) biennial scientific assemblies; 2) working groups; 3) commissions; 4) services and 5) website information. Of special importance to IAPSO is the involvement of scientists, especially early career scientists and students from developing and notably from least developed countries in oceanographic activities.

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

For more information see <https://iapso-ocean.org>.

ADMINISTRATION

The IAPSO Bureau was renewed in July 2023 during the IUGG General Assembly in Berlin. It comprises:

President:	Hans van Haren (the Netherlands)
Past President:	Trevor McDougall (Australia)
Secretary General:	Silvia Blanc (Argentina)
Treasurer:	Ken Ridgway (Australia)

The Executive Committee comprises the Bureau members and

Vice-President:	Agatha de Boer (Sweden)
	Toshiyuki Hibiya (Japan)
Members at Large:	Juliet Hermes (South Africa)
	Joellen Russell (USA)
	Yukio Masumoto (Japan)
	Jae-Hun Park (Republic of Korea)
	Alejandra Sanchez-Franks (United Kingdom)
	Regina Rodrigues (Brazil)
	Peter Zavialov (Russia)
	Malin Ödalen (Germany, chair IAPSO-EC)

The IAPSO office and day-to-day business is managed by Secretary General (SG) Silvia Blanc. The SG is responsible for the IAPSO website.

IAPSO finances are managed by the Australia-based Treasurer, Ken Ridgway.

IAPSO business meetings were conducted by email and videoconference where appropriate.

ACTIVITIES

IAMAS/IACS/IAPSO Joint Assembly, 20-25 July 2025, Busan, Republic of Korea

During the whole year IAPSO Secretary General (SG) has been working closely with IAMAS and IACS SGs as well as with the Local Organizing Committee (LOC) SG on a great variety of topics such as the Scientific Program of the Joint Assembly (JA), including selection of invited talks, conveners for the exclusive and joint symposia, logistics of the event, accommodation facilities, travel grants, important deadlines, general organization, event website (<http://www.baco-25.org/>).

The sessions in the International Association for the Physical Sciences of the Oceans (IAPSO) focus on a wide array of topics related to the physical sciences of the oceans. Key areas of focus include the mean sea level and tides, air-sea interaction, ocean mixing, ocean salinity, tsunamis and other ocean hazards, ocean modelling development, marine meteorology, and marine geodesy and geophysics.

Calls for the Nomination of the Prince Albert I Medal and the Early Career Scientist Medal and their respective candidates evaluation and selection procedures were carried out so that the corresponding awards can be given to the winner candidates in Busan during the JA.

SCOR Administration

Being member of the SCOR-EC, IAPSO President Hans van Haren attended virtually via zoom the full SCOR Annual Meeting held in Qingdao China in October 2024. The many subsidiary bodies of SCOR were all presented, reviewed and memberships renewed. Many of these bodies coordinate physical, biogeochemical and fisheries research in the global ocean. Two new SCOR working groups were selected for funding, each receiving sufficient funds for three face-to-face meetings. WG171 'MASIS', Towards best practices for Measuring and Archiving Stable Isotopes in Seawater, was elected together with WG172 'SALTWATER', Oceanic Salt Intrusion into Tidal Freshwater Rivers. Several replacements of EC-members were made, including Paul Myers now being SCOR's president and IAPSO's Yukio Masumoto now being one of SCOR's vice-presidents.

ACTIVITIES OF ASSOCIATION COMMISSIONS, WORKING GROUPS

Early Career Scientist Working Group

In 2024, IAPSO ECS have been reinforcing their team to prepare for 2025. Several new members have joined the working group, to allow for new activities in preparation for BACO-25. IAPSO ECS have contributed to an ongoing ECS initiative from IUGG, led by Dr. Katia Pinheiro, and have joined the newly-formed IUGG ECS committee led by the IUGG Secretary General Alexander Rudloff. IAPSO ECS have followed the scientific community and transitioned from X (former Twitter) to Bluesky as the main social media communication channel, and are already reaching 400 subscribers there (@iapso-ecs.bsky.social). The social media team has drafted an interactive Bluesky platform for oceanography job postings, which will be launched in 2025. Meanwhile, the newsletter team has conducted interviews with Early Career oceanographers, which will be featured in the newsletters of 2025 (first issue: https://www.iapsoecs.org/uploads/newsletter/iapsoecs_newsletter_2025_01.pdf)

IAPSO Best Practice Study Groups

As a result of the third call launched by IAPSO for Best Practice Study Groups at the rate of every two years (<https://iapso-ocean.org/funding-opportunities/best-practices-study-groups.html>) for the period 2024-2026, the following three proposals were selected:

- BPSG on calibrating measurements of total dissolved inorganic carbon in seawater.
- BPSG on ship based CTD/O2 operation, calibration and processing procedures.
- BPSG on reconciling cross-platform observations of ice-shelf melt.

An IAPSO Best Practice Study Group addresses an issue whose resolution will assist in the conduct of oceanographic research. In carrying out oceanographic research, a choice must frequently be made between a few options for measuring data, analysing data, processing software, or modelling a system. The reasons for choosing between competing methods are often not well documented and the relative strengths and weaknesses of these routes are usually not published or well known. Each Best Practice Study Group receives up to US\$12,000 towards the costs of a meeting and presents reports with partial advances every six months.

Joint Commission on Ice-Ocean Interactions (JCIOI, joint with IACS)

JCIOI held an online workshop on ice-ocean interactions from 14-18th October 2024, drawing together researchers interested in the processes that govern ocean-driven melt of glaciers and ice sheets. The workshop addressed four key science themes:

1. New perspectives on melt parameterisations
2. Focusing on the grounding zone
3. Emerging techniques for observing ice-ocean interactions
4. Impacts of meltwater on ocean circulation

Recordings of invited presentations from the workshop are available on our YouTube channel <https://www.youtube.com/@jointcommissiononice-ocean2388>.

An IAPSO-funded Best Practice Study Group in Copenhagen, in September 2024, was hosted to develop a framework for observing and modelling ocean-driven ice melt rates in Antarctica. Outcomes from the meeting will inform best practice on the collection of oceanographic, geophysical and glaciological data, and their synthesis in ice sheet and ocean models.

A Practice Bridge article on the need for a broader framework for understanding ice-ocean interactions in Antarctica was also recently published (FUSION; <https://doi.org/10.1525/elementa.2024.00036>). The article forms part of a SOOS Symposium Special Feature *Understanding the Trajectory and Implication of a Changing Southern Ocean: The Need for an Integrated Observing System*.

Finally, JCIOI will be hosting a session with SOFIA at BACO-25: JCP05 *Ice sheet-ocean interactions and impacts*.

Joint Committee on the Properties of Seawater (JCS)

Members continued working on tasks identified during the 2018 Workshops and on maintaining the TEOS-10 website (www.teos-10.org) and associated software, as well as other items relevant to JCS. The new chemical speciation taskgroup is very active, pursuing tasks related to the development of a comprehensive speciation models for Tris buffers, trace metals, and certain weak acids in seawater, to allow for applications in pH measurement/standardization, anoxic waters, and reactions in/near hydrothermal vents. They are also developing material for teaching the basics of chemical

speciation to 3rd year undergraduates and at the graduate level, and working towards a 2025 open workshop to address the fact that skills in the fundamentals of physical chemistry and aqueous solution thermodynamics have been in decline for some years, which is hampering progress in chemical oceanography. The pH subgroup has also made progress towards providing traceable measurements over a wide range of salinity and temperature in seawater, as well as in providing an uncertainty model and standardizing methods for pH measurements. However, problems with the long-term development and maintenance of JCS and related websites are becoming increasingly urgent to solve. A long-delayed in-person meeting of JCS is planned at the Busan IAMAS-IACS-IAPSO Joint Assembly in July 2025 at which point Terms of Reference and other discussions about the future of JCS will occur.

Permanent Service for Mean Sea Level (PSMSL)

In 2024 the Permanent Service for Mean Sea Level (PSMSL) added 1796 station-years from 730 stations. The previous three years had seen fewer than 700 stations added each year, but 2024 saw a return to pre-pandemic levels. One reason may be because sites that became inoperable had been repaired.

The PSMSL as part of the UK's National Oceanography Centre (NOC) was successful in securing funding from the UKRI – Natural Environment Research Council, under the Atlantic Climate and Environment Strategic Science (AtlantiS) programme to support some of our core activities from 2024 to 2029.

In July 2024 one of the metals conservators from National Museums Liverpool visited NOC Liverpool to carry out routine maintenance on the Bidston Doodson–Légé Tide Prediction Machine. We took the opportunity when the conservator was visiting, to train up four more "computers" (programmers) and to film parts of the process, to try to preserve and pass on this important part of our history.

Tsunami Commission (JTC, Joint with IASPEI and IAVCEI)

The JTC jointly organized The 2nd UNESCO-IOC Global Tsunami Symposium on "Two Decades After 2004 Indian Ocean Tsunami: Reflection and the Way Forward" held in Banda Ache, Indonesia during 11-14 November 2024. The JTC also organized The Special International Scientific Workshop on "Tsunami Sciences after the 2004 Sumatra Earthquake" as a pre-event of the UNESCO-IOC Symposium. Members of the JTC actively participated in organization of numerous tsunami sessions in AGU, EGU, AOGS General Assemblies and other Int. conferences, such as The 3rd World Conference on Meteotsunamis. The JTC published current tsunami research in Pure and Applied Geophysics as topical volumes, such as the five papers published online in the Tonga Volcanic Explosion 2022 Topical collection.

Supported Meetings

IAPSO requests to support the following scientific meetings have been accepted in the frame of the IUGG – Symposia Support 2025 Programme:

- ENSO (El Niño-Southern Oscillation) Winter School 2025, Honolulu HI, USA, 15-23 March 2025 (USD 10,000)
- 10th Oceanography Colloquium - 12th National Marine Sciences Conference, Puerto Madryn, Argentina, December 2025 (USD 9,000)

Two applications to IUGG Grants Program 2024-2025, supported by IAPSO, were awarded with USD 17,500 each, namely:

- The infra-gravity wave initiative.
- ECSNet: the IUGG Early-Career Scientists Network.

Awards

- Prof. Em. John Church (UNSW, Australia) who was awarded by IAPSO with the Prince Albert I Medal in 2023, received the Fellowship of the International Science Council (ISC) in 2024.
- Prof. Yukio Masumoto, one of the IAPSO Executive Committee members, became one of the Vice-Presidents of SCOR.

Obituaries



Prof. William Dewar (USA) passed away on December 28 2024. Dr Dewar was Prof. em. of Florida State University. Regarding his academic education, he got his Ph. D. in Physical Oceanography. Massachusetts Institute of Technology - Woods Hole Oceanographic Institution Joint Program in Oceanography, Cambridge, Massachusetts, U.S.A., 1983; his M.S. in Physical Oceanography, Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A., 1980; and his B.S. in Physics, Minor in Mathematics, Ohio State University, Columbus, Ohio, U.S.A., 1977.

His research interests were directed toward understanding the dynamics of the ocean at scales from 100 km to 10,000 km, because of a long-term research goal of understanding global climate with an approach both analytical and numerical. His published work has impacted modelers and theoreticians alike.

He represented IAPSO at the Commission on Mathematical Geophysics, a Union Commission of IUGG. He was a very kind and wise person and an outstanding mathematical oceanographer.

Unfortunately, Dr Dewar went too soon; he was too young, too energetic. The international oceanographic community benefited from his wide-ranging insights, his pleasant personality and his unique sense of humour. He is already being missed by oceanographers all over the world.



Dr Jorge Carlos Novarini (Argentina/USA) passed away on December 4 2024. Throughout his 45 years of scientific activity, carried out in Argentina and the United States of America, he got many achievements.

In particular, he introduced Acoustical Oceanography/Ocean Acoustics in Argentina, both in the academic field (Faculty of Exact and Natural Sciences – University of Buenos Aires) and in the naval field (Head of the Underwater Acoustics Division of the Naval Hydrography Service, 1969-1980; and of the Naval Research and Development Service, 1980-1992). He taught at the Physics Department of the Faculty of Exact and Natural Sciences of the University of Buenos Aires, becoming Academic Secretary. He was Professor/Researcher at the Naval Postgraduate School (Monterey, USA); Head of the High Frequency Loss Branch of the US Naval Oceanographic Office and Senior Research Scientist at Planning Systems Inc. He published numerous articles in specialized scientific journals.

He has received international distinctions such as being named a Fellow of the Acoustical Society of America. He had an active participation in the National Committee of IAPSO in Argentina in the period beginning of the 70s till the beginning of the 90s.

Those of us who had the pleasure of sharing his professional activity in the framework of scientific research and who have received the generous transfer of knowledge in an area as specific as underwater acoustics, a valuable tool to oceanographers, and who have witnessed his permanent intellectual honesty and human integrity, will always be very grateful to him.

FUTURE ACTIVITIES

The following activities are scheduled for 2025 and beyond:

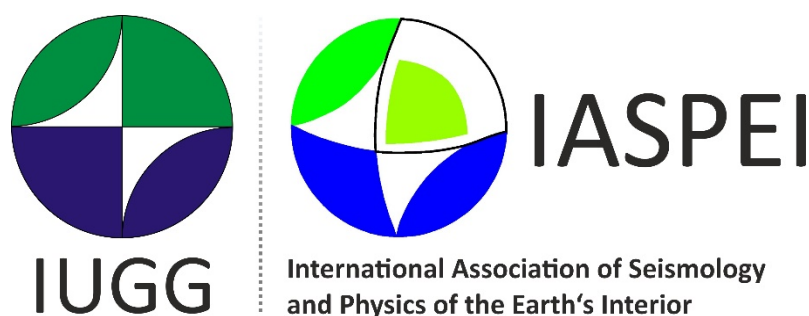
- Participation in the 2025 SCOR Annual Meeting in Santa Marta, Colombia from 29 to 31 October 2025.
- Organization of the next Joint Assembly with IAMAS and IACS in Busan, Republic of Korea, 20-25 July 2025.
- 29th IUGG General Assembly, July 2027, Incheon, Republic of Korea.

Silvia Blanc, IAPSO Secretary General
Hans van Haren, IAPSO President

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

IASPEI website: <http://iaspei.org>

INTRODUCTION



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

Most IASPEI efforts during 2024 were directed towards the Assemblies of IASPEI's four Regional Commissions and the preparation of the 2025 Joint IAGA-IASPEI Scientific Assembly.

ADMINISTRATION

EC & Bureau meetings. The IASPEI Bureau / Executive Committee (EC) had regular e-mail exchanges regarding all Association related questions (as e.g., financial support, requests, planning of future Assemblies or business to be solved immediately) between the members of the IASPEI Bureau and EC throughout the whole year.

IASPEI is registered as a Norwegian organization (Norwegian Org. Number 916 047 495).

Newsletters. IASPEI Newsletters were regularly sent as PDF-file attachments to more than 4200 e-mail addresses. The Newsletters are also available for download from the IASPEI website. Four Newsletter issues were distributed in 2024.

ACTIVITIES

Scientific Assemblies, Workshops/Symposia etc.

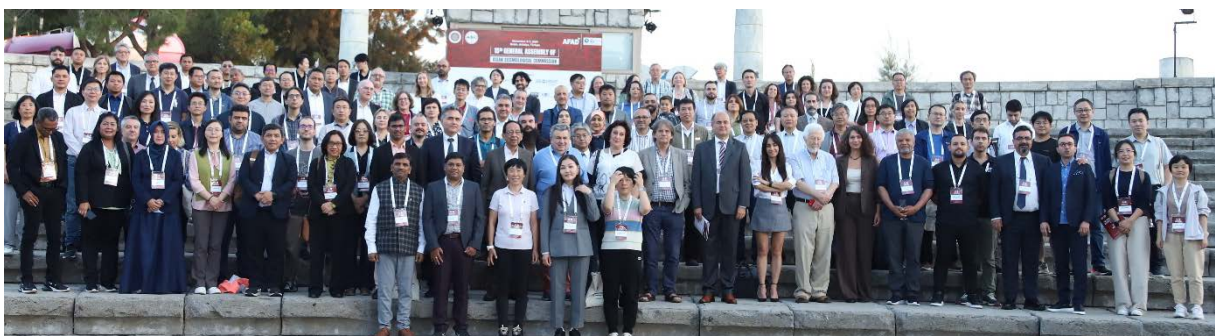
The 5th General Assembly of the Latin American and Caribbean Seismological Commission (LACSC) was held in San José, Costa Rica, from 24 to 28 June 2024. The Assembly had 141 participants among them 18 graduate and undergraduate students. The assembly featured two workshops: one on Distributed Acoustic Sensing (DAS), and another one on moment tensor inversion, which delved into both theoretical and practical applications relevant to the region's seismic challenges.



Group photo during the LACSC Assembly on June 27, 2024.



Participants of the Peter Bormann Young Seismologists Training Course (YSTC) before the 39th ESC General Assembly



Group photo of ASC Assembly participants

The European Seismological Commission (ESC) had its 39th General Corfu, Greece, from 22 to 27 September 2024. The assembly was organized as an in-person meeting with about 701 participants from more than 50 countries. During the week before its General Assembly, ESC organized the Peter Bormann Young Seismologist Training Course (YSTC) of 2024.

The 15th General Assembly of the Asian Seismological Commission (ASC) was held in Belek, Antalya, Türkiye, from 3 to 7 November 2024. The Assembly had more than 300 participants attending from 29

different countries. Two successfully courses on “Site Characterization, Data processing, Ground Motion Simulation and Waveform Inversion” and on “Induced Seismicity and Microseismicity: Fundamentals, Processing and Analysis of Induced Seismic Events” were also given for young scientist during the ASC2024.

The 4th General Assembly of the African Seismological Commission in Windhoek, Namibia, was planned for autumn 2024 but then moved to February 2025.

Activities of Association Commissions, Working Groups, Divisions, Services etc.

Some 2,000 hard copies of the first printed edition of the IASPEI New Manual of Seismological Observatory Practice (NMSOP, 2002) are currently being used in more than 100 countries at seismological observatories, data and analysis centers, and for teaching, research, and field applications. In addition, it is used as basic material within national and international seismology training courses, or by private enterprises and individual scientists. In 2009, this issue had been electronically published and work started for an updated new edition. In 2014, the rigorously updated and amended electronic second edition, NMSOP-2, was completed and put online, thanks to the efforts of the late Peter Bormann. This version, as well as future ones, are professionally maintained, further developed and edited by the GFZ Helmholtz Centre for Geosciences under a long-term commitment and the auspices of IASPEI and its Commission on Seismological Observation and Interpretation (CoSOI). All versions are freely available and downloadable from the website of the Joint Library of GFZ, PIK, AWI Potsdam and RIFS (<https://bib.telegrafenberg.de/en/publishing/publishing-services/nmsop>).

Scientific Programs, Projects, Publications

In 2024, IASPEI continued to financially support the work of the Inter-Association Working Group on Electromagnetic Studies of Earthquakes and Volcanoes (EMSEV).

Awards

The **IASPEI Medal** is awarded for distinguished contributions in seismology: for sustaining IASPEI goals and activities and for scientific merits in the field of seismology and physics of the Earth's interior. The Medal is awarded during the IASPEI Assemblies. The next IASPEI Medal 2025 is planned to be awarded during the Opening Plenary at the Scientific Assembly in Lisbon.

In 2016, the IASPEI Bureau established an **IASPEI Early Career Scientist Award** program aimed at engaging excellent young researchers in the IASPEI community. Each of the four IASPEI Regional Commissions was asked to select one Early Career researcher (graduate student, postdoctoral researcher, pre-tenure faculty member) from their commission at each even-year Assembly of that Regional Commission. The ESC decided during its General Assembly in September 2024, to give an IASPEI Early Career Scientist Award to Ms. Maha Adil from the University of Naples Federico II, Italy. The ASC decided during the General Assembly in November 2024 to give an IASPEI Early Career Award to Mr. Ono Towa, Institute of Science Tokyo, Japan.

Obituaries

Obituaries for internationally recognized scientists of the IASPEI community are regularly published in the IASPEI Newsletters and on the IASPEI webpage. In 2024, sadly, 13 obituaries had to be published.

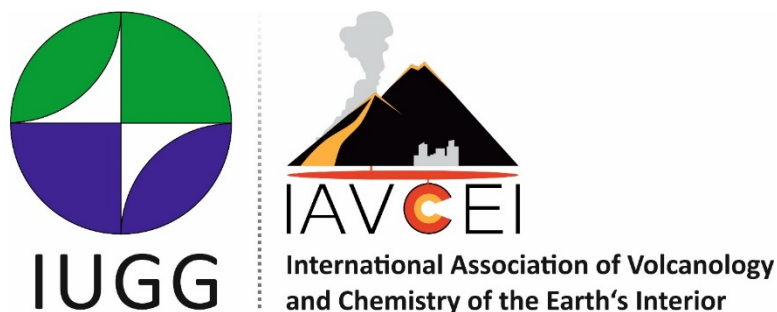
FUTURE ACTIVITIES

In 2025, the IASPEI main activities will be concentrating on the 2025 Joint IAGA-IASPEI Scientific Assembly.

The AfSC will hold its 4th General Assembly in Namibia in February 2025.

Johannes Schweitzer, IASPEI Secretary General

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



IAVCEI website: <https://www.iavceivolcano.org/>

INTRODUCTION

IAVCEI represents the international focus for research in Volcanology and Chemistry of the Earth's Interior. IAVCEI scientists are involved in a variety of disciplines of Earth Sciences, including physical volcanology, igneous geochemistry, geochronology, petrology, and geophysics. Moreover, many IAVCEI members are involved in continuous monitoring of active volcanoes in Volcano Observatories worldwide.

ADMINISTRATION

The 2023-2027 IAVCEI Executive Committee is composed of the following elected members:

PRESIDENT	Costanza BONADONNA	SWITZERLAND
SECRETARY GENERAL	Ulrich KUEPPERS	GERMANY
VICE-PRESIDENT	Marta CALVACHE	COLOMBIA
VICE-PRESIDENT	Andrew HARRIS	FRANCE
ECR REPRESENTATIVE	Joali PAREDES	NEW ZEALAND
COUNCILORS	Alessandro AIUPPA	ITALY
	Alvaro AMIGO	CHILE
	Alessandro BONFORTE	ITALY
	Nobuo GESHI	JAPAN

The 2023-2027 IAVCEI Advisory Board includes past-president (Patrick ALLARD, France) past-secretary (Roberto SULPIZIO, Italy) and the following non-elected members:

BULLETIN OF VOLCANOLOGY (EDITOR-IN-CHIEF)	Marie EDMONDS	UK
International Network for VOLcanology Collaboration (INVOLC) (CO-LEADER)	Karen FONTIJN	BELGIUM
Indigenous Volcanology Network (CO-LEADER)	Cheryl CAMERON	USA
World Organization of Volcano Observatories (WOVO) (LEADER)	Nico FOURNIER	NEW ZEALAND
Diversity, Equity, and Inclusion (DEI) (ADVISOR)	Elisabeth GALLANT	USA

ACTIVITIES

Membership

By the end of 2024, IAVCEI had 1323 paid members and 3097 unpaid members. The latter number refers to all those who have not yet paid their 2025 membership fee. A deep work was carried to improve the management of memberships and strengthen the “benefits for members” strategy. The 1323 paid members represent 63 countries and consist of 47.0% women, 52.8% men and 0.2% non-binary. 33% of our members Early Career Researchers. This attests the vitality and attractiveness of our Association.

Communication, Newsletters and website

IAVCEI Social Media Communication Team

The IAVCEI Social Media Communication Team is composed of diverse members in terms of discipline, region, and gender (including representatives of our 3 partner institutions ALVO, AIV and VSJ):

Joali PAREDES (ECR REPRESENTATIVE)	(New Zealand, LEADER)
Juan David ALVAREZ SILVA	(Colombia - ALVO representative)
Chris E CONWAY	(Geological Survey of Japan – VSJ Representative)
Valentin FRERET-LORGERIL	(Clermont-Ferrand, France)
Johana Andrea GÓMEZ ARANGO	(Universidad Nacional Autónoma de México)
Omari GRAHAM	(Seismic Research Centre, West Indies)
Alicia MANZO	(Dos Rios Ranch State Park, USA)
Silvia MASSARO	(Univ. Bari, Italy - AIV representative)
Indranova SUHENDRO	(Univ. Yogyakarta, Indonesia)
Alexis YAYING PENG	(ETH Zurich, Switzerland)

The IAVCEI Social Media Communication Team has been instrumental in enhancing IAVCEI's online presence and engagement throughout 2024. Led by a global team, including representatives from various regions, the team focused on highlighting key aspects of volcanology:

- Regular content creation and publication across platforms including Instagram, Facebook, LinkedIn, and BlueSky, with at least one post per week.
- Representation of IAVCEI at the IUGG social media team, showcasing involvement opportunities and initiatives within the organization.
- Growth in follower engagement across platforms, reflecting increased visibility and outreach efforts.

These activities have effectively promoted IAVCEI's mission, supported ECR development, and strengthened global outreach via digital platforms.

IAVCEI Newsletters

Four Newsletters were published in 2024 (<https://www.iavceivolcano.org/newsletter/>). The new style and format has been well-received, as has the "look" of the cover with feature article as headline, and the hyperlinked contents page. Each newsletter now contains three parts which appear after the feature article. Part 1 is of fixed format is entitled " **IAVCEI – Who we are and What we do** " and contains four sections, each of which contain invited articles from IAVCEI members or affiliated bodies: 1. IAVCEI Commissions and Network Updates; 2. The Voice of IAVCEI Early Career Researchers; 3. Insider Perspective: What's my job?; 4. Observatory News. Part 2 contains reports of IAVCEI

conferences, meetings and workshops, where contributors are invited from both organizers and attendees (including ECR perspectives). Part 3 " **IAVCEI – Down to Business** " contains announcements, calls and updates on IAVCEI initiatives, with two fixed sections: 1. Events and Meetings 2024–2026; 2. Bulletin of Volcanology: Executive Editor's Column. The first newsletter for 2025 is currently in preparation with the aim of a March publication date so as to provide timely information for our Scientific Assembly in June-July.

IAVCEI Website

The IAVCEI website has been completely restructured and updated in order to best reflect the new activities of the organization (<https://www.iavceivolcano.org/>).

Bulletin of Volcanology

Bulletin of Volcanology, the official journal of IAVCEI published by Springer, is the oldest journal in volcanology (established in 1922). During 2024 the journal continued to attract an increasing number of high-quality manuscript submissions. During 2024 200 submissions were received, which is an increase of 25% on the previous 3 years. We can also report that the impact factor has risen to 3.6, continuing its upward trajectory. Our diverse editorial team currently numbers around 25, with a good number of early career researchers.

In 2024 the IAVCEI Executive Committee decided that Bulletin of Volcanology will remain a hybrid journal, which allows both subscription-based publishing and open access publishing at the article level. Increasingly we are finding that authors are opting for open access: in 2024 two thirds of our submissions were published that way. If the corresponding author of the paper belongs to an institution or country with a transformative agreement with Springer, then this agreement covers the open access fee with no cost to the author. We are actively encouraging all of our authors to explore this option to increase the accessibility of our articles. The Executive Editor will co-convene a session at IAVCEI 2025 with the Chief Editor of Volcanica, an established community- led open access journal.

Bulletin of Volcanology publishes a range of article types including Data Reports, established in 2022, to allow researchers and volcano observatory staff to publish datasets. We have, at any one time, up to 10 special collections operating, often focussing on outputs from IAVCEI Commission meetings and General Assemblies.

Meetings, workshops and courses

- ***12th Cities on Volcanoes Conference (Antigua, Guatemala; February 2024)***

Cities on Volcanoes (COV) conferences are special gatherings, each with a decidedly local flavour, that create and nurture connections between volcanologists, government authorities, emergency managers, social scientists, and local communities. The aim is to bring together those with an interest and stake in volcanic crisis preparedness and management in cities and populated areas.

The 12th edition of the Cities on Volcanoes conference (CoV 12) took place in the city of La Antigua Guatemala, from February 11 to 17 this year. La Antigua Guatemala was the ideal place for this conference, considering its long history of disasters associated with volcanoes and other geological phenomena, but also because of its status as one of the main tourist attraction areas of Guatemala and view of, and access to, active volcanoes nearby. CoV 12 attracted a broad variety of people passionate about volcanoes and their connection with society, including researchers interested in studying volcanoes from inter- and trans-disciplinary perspectives, involving physical and social sciences, the arts and humanities, and from the perspective of risk communication and management,

including topics related to civil protection and the evaluation and monitoring of volcanic hazards. More than 600 delegates from 34 countries participated, including more than 180 from Guatemala.

There were 273 oral presentations, 60 lightning talks, 7 panels, 327 posters, 9 round tables, and a variety of group activities, musical presentations, and art exhibitions, as well as four plenary panel sessions with simultaneous translations into English and Spanish. The conference included two simultaneous field trip options on Wednesday, February 14, to Fuego or Pacaya volcanoes, including a visit to the ruins of the village of San Miguel Los Lotes, that was destroyed during the eruption of Fuego volcano on June 3, 2018, and where hundreds of people died in the most destructive eruption in Guatemala in almost a century. During the conference week, cultural nights were planned with the objective of showing the talent of regional artists and visiting some of the historic monuments around, including activities in the La Ermita de la Santa Cruz, Casa Convento Concepción, and the Convento de Santa Clara. We also organized photo exhibitions, documentary film showings, history, culture and folkloric music. Associated with CoV 12, but organized by independent groups of researchers, were nine field trips and 17 pre- and post- conference workshops took place, as well as two network meetings of Latin American volcano observatories and young volcanologists.

A central goal of the conference was to facilitate an inclusive conference with a diversity of participants and audiences because we held the belief that these participant experiences and dialogues would enrich the conference outcomes. To facilitate participation of those traditionally underrepresented, registration costs were minimized, particularly for participants with low economic resources. Special effort was also directed at encouraging participants from outside academia, for example, community leader groups that liaise with civil protection groups from several villages around three volcanoes in Guatemala, representatives from women's organizations, community researchers and representatives from communities impacted by recent volcanic eruptions (from Guatemala and the Caribbean). There was a volunteer program, which recruited 26 university students from Guatemala, who helped with logistical tasks during the four days of conference, and with this they could participate in two days of the conference, with hotel expenses and transportation covered. The conference had the support of various Guatemalan and international funders, which financed the participation of many of the national and international participants. Among them are the Volcano Disaster Assistance Program (VDAP) of the United States Geological Survey (USGS), the Scottish Funding Council, the UK-funded GCRF Ixchel project, a consortium of British and Guatemalan, and US universities, the Secretaría Nacional de Ciencia y Tecnología (SENACYT), and the Asociación Guatemalteca de Física. With funds from these agencies as well as funds raised from conference registration it was possible to provide economic assistance to partially cover travel and accommodation costs for at least 144 participants.

The conference was the culmination of 4 years of planning and joint work between the Local Organizing Committee, the Program Organizing Committee, and all the organizers of field trips, workshops, and other activities associated with the conference.

• ***Other meetings co-organized and/or sponsored by the IAVCEI in 2024***

- Volcandpark 2024, Jičín, Check Republic, May 20-24
- 1st international workshop on volcanic and igneous plumbing systems, Liverpool, UK, June 18–20
- 2nd edition of the Carpathian Fluid Geochemistry Summer School, Eastern Carpathians, Romania, July 15–21
- 10th International Conference on Tephra Studies, Catania, Italy, September 8–15
- Annual Workshop 2024 Volcano Seismology & Acoustics, El Paso, La Palma, Spain, September 16-21
- 6th Conference Alfred Rittmann, Catania, Italy, September 18–20
- Training course: Advances in Space and Ground base studies of Earthquakes and Volcanoes; New Concepts, Chania, Crete, Greece, October 5-6

- Biannual International EMSEV workshop on Electromagnetic Studies of Earthquakes and Volcanoes, Chania, Crete, Greece, October 6-9
- 9th school on Convective and Volcanic Clouds (CVC) detecting, monitoring and modelling, Nicolosi, Italy, October 5–13,
- 1st International Monogenetic Conference, San Pedro de Atacama, Chile, November 4–8

IAVCEI Awards

The new Executive Committee has introduced a new accolade—the Honorary Award— which recognizes individuals for their lifetime achievements. Two Honorary awards were posthumously bestowed during COV12 upon two exceptional colleagues who recently departed but whose impactful legacies endure:

- Minard Pete Hall from the Instituto Geofísico – EPN in Quito (Ecuador).
- Jim Kauahikaua from the Hawaiian Volcano Observatory

IAVCEI Award Committees

Within the new EC mandate, two award committees have been established:

2023-2027 Award Committee VW2 (VSCM, Walker, Wager – every 2 years)

1. Silvana Hidalgo (IG-EPN Ecuador)
2. Steffi Burchardt (Uppsala University, Sweden)
3. Masato Iguchi (Sakurajima Obs., Japan)
4. Jake Lowenstern (USGS, USA)
5. Ailsa Naismith (University of Bristol, UK)
6. Marco Pistolesi (University of Pisa, Italy)
7. Richie Robertson (UWI, West Indies)

2023-2027 Award Committee FKTC (Fisher, Krafft, Thorarinsson – every 4 years; Collective Research - every 2 years)

1. Chair: Fidel Costa (IPGP, France)
2. Lizeth Caballero (UNAM, Mexico)
3. Kathy Cashman (Oregon University, USA)
4. Julia Eychenne (Clermont Ferrand, France)
5. Mie Ichihara (University of Tokyo, Japan)
6. Mike Ramsey (Pittsburgh University, USA)
7. Freysteinn Sigmundsson (University of Iceland, Iceland)

A new advocating committee has also been established that is responsible for the identification of diverse award candidates and associated potential nominators. They will also identify potential candidates for the EC elections in 2027.

Advocating Committee (for all Awards and Medals and EC Election)

1. Chair: Jenni Barclay (University of Bristol, UK)
2. Marie Edmonds (University of Cambridge, UK) (BV Executive Editor)
3. Pablo Forte (OAVV - SEGEMAR, AR) (ECR representative)
4. Jon Procter (Massey University, NZ) (Indigenous Volcanology representative)
5. Laura Sandri (INGV, IT) (WOVO representative)

6. Gezahegn Yirgu (University of Addis Abeba, ET) (INVOLC representative)
7. Daniele Andrade (Instituto Geofísico-EPN, Ecuador)
8. Jon Blundy (University of Oxford, UK)
9. Eisuke Fujita (Volcano Disaster Resilience Research Division, JP)
10. Pete La Femina (geophysics) (Penn State, USA/Bremen University, GE)
11. Jan Lindsay (University of Auckland, NZ)
12. Emma Nicholson (Liu) (University College London, UK)
13. Mylene Villegas (Philippine Institute of Volcanology and Seismology, PH)
14. Blaire Schoene (geochemistry) (Princeton University, USA)

IAVCEI Commissions, Networks and Working Groups

In 2024, the IAVCEI Commissions and Networks have been very active, with the direction of the new guidelines defined by the EC-IAVCEI, the S&BL that have been revised in the last year, as well as the adoption of the Code of Conduct for IAVCEI meetings and events, which allows having a conduct direction for any on-site or online event that is developed under the auspices of the IAVCEI, additionally, the IAVCEI International Network for Volcanology Collaboration - INVOLC, worked and published Towards inclusive collaboration in volcanology: guidelines for best-engagement protocols in international collaboration, 2024, which supports the code of conduct.

During 2024, three commissions have held elections: in February the Volcano Geology commission, in May the Volcano Geoheritage and Protected Volcanic Landscapes commission, and in October the Inter Associations Commission IAGA/IASPEI/IAVCEI Working Group on Electromagnetic Studies of Earthquakes and Volcanoes - EMSEV held elections.

In 2024, two events have been carried out organized by the join efforts of two commissions for each meeting, recognizing the importance of collaboration between commissions.

The commissions and networks have organized workshops, multiple sessions and meetings for the IAVCEI General Assembly to be held in Geneva from June 29 to July 4, 2025. The EC-IAVCEI received the request and approved the formation of a new network called Indigenous Volcanology, whose main objectives are: to share information and provide leadership for the indigenous volcanology group, recognize the diversity of IAVCEI and among volcanologists, highlight the connection between volcanology and the social world, become a source to improve interaction and share knowledge with Indigenous Peoples and communities.

The updated list of Commissions, Networks and Working Groups (joint Commissions) is reported below. Today the IAVCEI hosts 18 purely IAVCEI Commissions, 4 Networks, and 7 Joint Commissions (with other IUGG's Associations):

1) *Purely IAVCEI Commissions*

1. Chemistry of Volcanic Gases
2. Volcanic Lakes
3. Volcanic Clouds (ex-Remote Sensing)
4. Collapse Calderas
5. Explosive Volcanism
6. Monogenetic Volcanism
7. Submarine Volcanism
8. Volcanic and Igneous Plumbing Systems
9. Large Igneous Provinces
10. Volcanogenic Sediments
11. Volcano Geology

12. Tephrochronology
13. Tephra Hazard Modelling
14. Statistics in Volcanology
15. Volcanic Hazards and Risk
16. Cities and Volcanoes
17. International Volcanic Health Hazard Network (IVHHN)
18. Volcano Geoheritage and Protected Volcanic Landscapes

2) Networks

- a. Early-Career Researchers Network (ECR-Net)
- b. International Network for VOLcanology Collaboration (INVOLC)
- c. World Organization of Volcano Observatories (WOVO)
- d. Indigenous Volcanology Network

3) Joint Commissions

1. IAG/IAVCEI Commission on Volcano Geodesy
2. IASPEI/IAVCEI Commission on Volcano Seismology and Acoustics
3. IASPEI/IAVCEI/IGA Commission Physics & Chemistry of Earth Materials
4. IAGA/IASPEI/IAVCEI Working Group on Electromagnetic Studies of Earthquakes and Volcanoes (EMSEV)
5. IAGA/IASPEI/IAVCEI International Heat Flow Commission
6. IAVCEI/IACS Commission on Volcano-Ice Interaction
7. IAPSO/IASPEI/IAVCEI Commission on Tsunamis

World Organization of Volcano Observatories (WOVO)

2024 has been a year of transformation for WOVO after a few years of hiatus. A WOVO Executive Leadership Team was put together by the IAVCEI Executive Committee with the mandate to restructure the organisation and spearhead a rejuvenation effort over the next 4 years.

WOVO is now designated as a IAVCEI Network, with the aim to connect, support and advocate for volcano monitoring institutions worldwide through 3 core programmes: Volcano Observatories Best Practice Workshops, [WOVOdat](#), and Cross-disciplinary initiatives such as the Volcanic Ash and Aviation Hazards (VAAH) and Early Warnings. The WOVO ELT currently consists of the leads of the 3 core programmes (Laura Sandri, INGV and Jake Lowenstern, USGS/VDAP, for the Volcano Observatories Best Practice workshop (VOBP); Benoit Taisne and Christina Widiwijayanti, EOS/ASE/NTU, for WOVOdat; Sara Barsotti, IMO, for Cross-disciplinary initiatives and Early Warnings), a secretarial team from the IAVCEI EC (Nobuo Geshi, Kyushu Uni, Alvaro Amigo, SERNAGEOMIN, and Alessandro Bonforte, INGV), and a chair (Nico Fournier, GNS Science).

Key priorities for the first two years include:

- create Terms of Reference for the ELT and include additional ELT members to ensure fair geographical representation; and create some processes for future ELTs (e.g., voting)
- update the list of WOVO volcano observatory members
- revamp of the WOVO website as a main information portal for WOVO
- offer some engagement opportunities at the IAVCEI 2025 Scientific Assembly
- organise VOBP6 in 2026
- continue the WOVOdat effort
- represent and advocate for volcano observatories at UN Early Warning For All discussions

Early Career Researchers Network (ECR -Net)

In 2024, the IAVCEI, through various initiatives led by the Early Career Researchers Network (ECR-Net) and the Social Media Communication Team continued to foster engagement and professional development within the volcanology community. These efforts have strengthened IAVCEI's global presence and supported early-career researchers in their academic and professional journeys.

ECR-Net (Early Career Researchers Network):

The ECR-Net remains active with bi-monthly meetings and continuous communication through its WhatsApp channel. In 2024, the ECR-Net organized several impactful initiatives:

- A bilingual speed mentoring event at the Cities on Volcanoes conference in Guatemala, offering career advice on CV creation, emergency management, grant proposals, and more. (Feb 2024)
- A four-part "Masterclasses" series on research preparation, publishing, and publicity, aimed at demystifying scholarly publishing for early-career researchers. (Sep 2024)
- Proposing of the IAVCEI ECR-Net Proofreading Exchange, facilitating manuscript proofreading support for non-native English speakers within the network. Approved by the Executive Committee (Dec 2024)
- Introduction of the ECR plenary session at the IAVCEI Scientific Assembly 2025, providing dedicated opportunities for ECRs to showcase their research, continuing the success from previous years. (Nov 2024 – Current)

International Network for VOLcanology Collaboration (INVOLC)

INVOLC holds quarterly online board meetings to provide updates from regional networks and representatives (Central America, South America, Africa, South-East Asia, SW Pacific) and to plan activities. The board is currently composed of 13 members including the chair, and we started discussions to prepare for elections to renew the board in 2025. The main deliverable of INVOLC in 2024 was the publication of best- engagement protocols for international collaboration in volcanology, as endorsed by IAVCEI EC. This paper was published open access in Bulletin of Volcanology: Towards inclusive collaboration in volcanology: guidelines for best-engagement protocols in international collaboration | Bulletin of Volcanology. In addition, we gave a presentation during the Cities on Volcanoes conference in Guatemala on the INVOLC network. We also held a meeting with ALVO to discuss the potential for a co-organised workshop to be held in-country (e.g. Bolivia). We previously had a Twitter account but are in the process of closing it and have moved to BlueSky: @iavcei-involc.bsky.social.

Plans for 2025

We have planned extra board meetings in the month of February to prepare for elections which will be held immediately after the SA meeting in July. The key discussions revolve around (re)defining the different roles and responsibilities of board members, whilst maintaining regional representation across the board, defining working groups to organise activities, and how to deal with membership. We will convene a workshop during the IAVCEI 2025 Scientific Assembly in Geneva: Towards Inclusive Collaboration: Reflections and discussion on engagement in global volcanology. This workshop will be open to up to 50 participants in person, and will likely be held in hybrid mode, to broaden the audience reached. Key discussion points during the workshop will be policy on international collaboration and equitable partnerships, mentorship for researchers based in LMI countries, and deconstructing bias and discriminating practices.

Indigenous Volcanology Network (IVN)

The 2022 Global Assessment Report (GAR) on Disaster Risk Reduction (DRR) recognized the important role Indigenous people play in drawing upon traditional/Indigenous knowledge to drive decision-making, resulting in resilient solutions.

Recognizing the complementary efforts of Indigenous knowledge and volcano hazards research, the Cities on Volcanoes 12 conference in Guatemala included a half-day workshop to discuss how the volcanological community and IAVCEI can grow and recognize the current impact of volcanologists and Indigenous researchers. The workshop, “Finding resonance: Building an IAVCEI Commission on Indigenous People and Volcanology” attracted 25 participants from around the globe, and included a variety of Indigenous researchers, volcanologists, and community leaders. Discussion focused on forming an IAVCEI Commission dedicated to support mentoring of Indigenous volcanologists, support for volcanologists who intend to undertake research involving Indigenous people or exploring Indigenous knowledge, and Indigenous people seeking information and guidance from volcanologists.

Group members submitted a successful application to create an Indigenous Volcanology Network to IAVCEI in late 2024. The IVN has initiated communication with all founding members, and plans a session and Network meeting at the IAVCEI 2025 Scientific Assembly, where the group will elect formal leadership. Group members also continue working on a chapter of Indigenous perspectives for the 3rd edition of the Encyclopedia of Volcanoes and plans for exchanges and conference participation.

Statutes and By-Laws

As a result of the discussion of the IAVCEI General Assembly during the 28th IUGG GA, it was demanded that the Statutes and By-Laws (SBL) are revised and updated. A working group was instituted in August 2023 including some members of the current EC and IAVCEI members that were present at the 28th IUGG GA. The working group mostly worked through zoom meetings between August and December 2023 to increase transparency, diversity, equity, inclusion and efficiency of IAVCEI procedures and activities. The Statutes and By-Laws were approved by the EC-AB and voted online by IAVCEI members. The new version can be found here: [https://www.iavceivolcano.org/statutes-and-by-law s/](https://www.iavceivolcano.org/statutes-and-by-law-s/).

Main changes include:

- The wording of the SBL was revised to respect Diversity, Equity, and Inclusion (DEI) principles.
- IAVCEI base is in Munich, Germany.
- Definitions were revised (e.g. ECRs, members).
- A DEI Advisor was established to be included in the IAVCEI Advisory Board.
- Two new award committees were instituted.
- A new advocating committee was established that is responsible for the identification of diverse award recipients as well as diverse candidates for the new EC election in 2027.
- Election procedures were updated and made more clear.
- Awards definition are now outside of SBL and described on the IAVCEI website.
- A new Code of Conduct for IAVCEI conferences, workshops and activities was established that is also outside the SBL (<https://www.iavceivolcano.org/code-of-conduct-for-iavcei-meetings-and-events/>).

IAVCEI and the UN’s Initiative for ‘Early Warnings For All’

Taking advantage of the fact that 2025 IAVCEI Scientific Assembly is being held in Geneva (June 29-July 5, 2025), we are organizing an international workshop on Volcanic Hazards within the context of EW4All (7-9 July 2025). The workshop is organised in collaboration with the World Meteorological

Organization (WMO), the International Federation of the Red Cross and Red Crescent Societies (IFRC), and the United Nations Office for Disaster Risk Reduction (UNDRR) and seeks to bring together diverse research areas, service providers, UN bodies and aid agencies and users to foster integration with the UN Early Warnings For All initiative (EW4All).

FUTURE ACTIVITIES

2025 will be a year dense of activities for the new IAVCEI EC. Major milestones will include:

- IAVCEI SA 2025
- Organisation of COV13 2026
- IUGG Business meeting in Korea
- Publication of the ***IAVCEI Newsletters 2025-1, 2025-2, 2025-3, 2025-4.***
- Financial updates (e.g. reports, supports to meetings and Commissions' activities)

Costanza Bonadonna, IAVCEI President

ACTIVITIES OF THE UNION COMMISSIONS

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 website where much more information can be found.

Union Commission on Climate and Environmental Change (CCEC)



INTRODUCTION

The history and purpose of CCEC may be found on the CCEC web site at: www.ccec-iugg.org.

ADMINISTRATION

The Chair is Jianping Li (China), the Vice-Chair is Keith Alverson (Canada/USA), the Secretary-Treasurer is Tonie van Dam (USA/LU), and the Immediate Past Chair is Tom Beer (Australia).

Commission members include Harry Bryden (UK), Mark Clilverd (UK), Annette Eicker (Germany), Domenico Giardini (Switzerland), Andrew Mackintosh (Australia), Alberto Montanari (Italy), Joyce Penner (USA), Alan Robock (USA), Dan Rosbjerg (Denmark).

ACTIVITIES

Organization of Scientific Meetings

1. Organization of “2024 International Forum on Pacific Island Countries Response to Climate Change (PICC2024)” on July 6-7, 2024 in Qingdao, China. More than 100 participants from more than 10 countries, including China, the United States, the United Kingdom, Spain, Korea, Fiji, and other countries attended the conference.
2. Organization of “2024 International Forum on Carbon Neutrality and Sustainable Development (CNSD 2024)” on November 17, 2024 in Qingdao, China. Nearly 60 participants from 6 countries, including China, Italy, Spain, the United Kingdom, Nigeria and Rwanda attended the conference.
3. At EGU 2024 Assembly (14-19 April 2024), organized Session AS1.18: Monsoon systems in the past and present and under future climate change (Conveners Andrew Turner, Roberta D'Agostino, Kyung-Ja Ha, and Jianping Li).
4. At AGU24 Annual Meeting (9-13 December 2024), Washington D.C, USA, organized Session

A070: Decadal Climate Variability: Key Processes of Air-Sea Interaction, Mechanisms and Predictability (Lead Convener: Jianping Li).

5. At AGU24 Annual Meeting (9-13 December 2024), Washington D.C, USA, organized Session A015: Ocean-Land-Atmosphere Interactions and Extreme Weather and Climate (Jianping Li as a Co-Convener).

IPCC Activities

IUGG is one of IPCC Observer Organizations. Chair Jianping Li is the IUGG Liaison Officer to IPCC (2023-2027). As an observer, he was invited by IPCC to attend the Sixtieth Session of the IPCC in Istanbul, Türkiye, from 16 to 19 January 2024, and the Sixty-first Session of the IPCC in Sofia, Bulgaria, from 27 July to 2 August 2024.

Keynote Speeches and Invited Talks

1. Invited Talk, Jianping Li, Multidecadal Variability of Northern Hemisphere Summer Monsoon Forced by the SST Inter-hemispheric Dipole, Asia Oceania Geosciences Society 21st Annual Meeting, June 23-28 2024, Pyeongchang, South Korea.
2. Invited Talk, Jianping Li, Preceding Winter Okhotsk Sea Ice as a Precursor to the Following Winter Extreme Precipitation in South China, Asia Oceania Geosciences Society 21st Annual Meeting, June 23-28 2024, Pyeongchang, South Korea.
3. Invited Talk, Jianping Li, Impacts of Climate Change on Sea Level Rise in Pacific Island Countries, 2024 International Forum on Pacific Island Countries Response to Climate Change (PICC2024), July 6-7 2024, Qingdao, China.

FUTURE ACTIVITIES

We plan to organize the following Scientific Meetings:

1. Co-organization of “2025 International Forum on Pacific Island Countries Response to Climate Change (PICC2025)” in June 2025 in Qingdao, China.
2. Co-organization, EGU 2025 General Assembly session AS1.24, Monsoon systems in the past and present and under future climate change, 27 April-2 May 2025, Vienna, Austria (Convener: Andrew Turner; Co-conveners: Roberta D'Agostino, Kyung-Ja Ha, Jianping Li).
3. Organization, Busan IAMAS-IACS-IAPSO Joint Assembly 2025 (BACO25) session M18, Monsoon systems: variability, processes, predictability, change and extremes, 20-25 July 2025, Busan, South Korea (Lead Convener: Jianping Li).
4. Co-organization, Busan IAMAS-IACS-IAPSO Joint Assembly 2025 (BACO25) session M17, Atlantic Overturning Circulation: Climate Impacts and External Factors, 20-25 July 2025, Busan, South Korea (Jianping Li as a Co-Convener).
5. Co-organization, Busan IAMAS-IACS-IAPSO Joint Assembly 2025 (BACO25) session JMP09, El Niño/Southern Oscillation and its Global and Regional Impacts, 20-25 July 2025, Busan, South Korea (Jianping Li as a Co-Convener).

As the IUGG Liaison Officer to IPCC (2023-2027), Jianping Li has been invited by IPCC to attend the Sixty-second Session of the IPCC in Hangzhou, China, from 24 to 28 February 2025.

Jianping Li, CCEC Chair

Union Commission on Mathematical Geophysics (CMG)

CMG website: <https://iugg.org/associations-commissions/commissions/cmg/>

INTRODUCTION

The Commission on Mathematical Geophysics (hereinafter ‘Commission’) 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 Commission is scientifically sponsored by all IUGG Associations.

ADMINISTRATION

The Commission is led by an Executive Committee, currently comprising: Alik Ismail-Zadeh (Chair; Germany), Enamundram Chandrasekhar (Vice-Chair; India), Andrew Valentine (Secretary; UK), Yehuda Ben-Zion (past Chair; USA), Roberto Carniel (Italy), Fabio Castelli (Italy), Alexander Fournier (France), Pavel Novák (Czechia), Sang-Mook Lee (Rep. of Korea), Elisa Mantelli (Germany), Oleg Melnik (UK) and Leslie Smith (USA). Sadly, Executive Committee member William Dewar (USA) passed away in December 2024, and will be sorely missed.

The Executive Committee is supported by an Advisory Committee, currently comprising: Salvatore Grimaldi (Italy), Ute Herzfeld (USA), Dick Peltier (Canada), Annick Pouquet (USA), Daniel Rothman (USA), Malcolm Sambridge (Australia) and Frederik Simons (USA).

ACTIVITIES

The Vladimir Keilis-Borok Medal

In early 2024, the Commission announced that the 2024 Vladimir Keilis-Borok Medal would be awarded to Prof. Valerio Lucarini (University of Leicester, UK) for his outstanding contribution to mathematical geophysics and development of cutting-edge mathematical theories for understanding the climate system fluctuations and its response to forcing. This was presented during the opening ceremony of the 34th IUGG Conference on Mathematical Geophysics in Mumbai, India (see below). Following the presentation, Prof. Lucarini delivered a lecture on the topic *“Metastability properties of the Earth’s climate: A multiscale viewpoint”*.

The 34th IUGG Conference on Mathematical Geophysics

The 34th IUGG Conference on Mathematical Geophysics (CMG2024) was held between 2nd June and 7th June 2024, at the Indian Institute of Technology Bombay (IITB) in Mumbai, India. This meeting was organised by a local committee, chaired by Prof. Enamundram Chandrasekhar, attracting about 100 participants from around the world. The main theme of the conference was *“Mathematical Geophysics for Sustainable Development”*, and it provided an opportunity to celebrate the 60th anniversary of the formation of the Commission itself.

Scientific highlights of the meeting included Prof. Valerio Lucarini's Vladimir Keilis-Borok Medal lecture (above), and a special session in memory of the late Ilya Zalaipin (Commission Secretary, 2014-2023). In addition, delegates enjoyed a mid-conference excursion to the Elephanta Caves on Elephanta Island, where they were able to see sculptures and archaeological artefacts dating back to the 2nd century BCE. The conference was complemented by a three-day pre-conference workshop on “*Computational Geosciences for Sustainable Development*”, which was attended by a number of students from around India. This was held free of charge, thanks to generous support from the IUGG and IIT Bombay.



Attendees at CMG2024. Photo courtesy of E. Chandrasekhar

FUTURE ACTIVITIES

- Following the success of CMG2024, the Executive Committee is working on plans for the 35th IUGG Conference on Mathematical Geophysics, which is expected to be held in 2026.
- Nominations for the Vladimir Keilis-Borok Medal, which is awarded biennially, will be sought in late 2025.

Alik Ismail-Zadeh (CMG Chair) and Andrew Valentine (CMG Secretary)

Union Commission on Geophysical Risk and Sustainability (GRC)



GRC website: <https://iugg.org/associations-commissions/commissions/grc/>

INTRODUCTION

The IUGG Commission on Geophysical Risk and Sustainability (IUGG GeoRisk Commission, or GRC) was established by the IUGG Bureau in August 2000. The GRC seeks to advance the role of science in the reduction of natural disasters through better societal understanding of environmental natural hazards. Fully understanding the risk posed by natural hazards also requires an understanding of their environmental and economic impacts. Areas of development include accurate early warning through the robust and effective flow of critical information to decision making by emergency managers, policy-makers, scientists and the general public via initiatives, meetings, workshops, and publications. The GeTEWS Oceania Initiative of the GRC addresses eighteen resolutions of the resolutions advanced by the IUGG General Assemblies since 1999.

ADMINISTRATION

Executive Committee:

Chair: John LaBrecque (IAG, USA)
Vice-Chair: Vyacheslav Gusiakov (IAPSO, RUSSIA)
Vice-Chair: Chun-Chieh Wu (IAMAS, CHINA: ACADEMY OF SCIENCES IN TAIPEI)
Secretary/ Treasurer: Yekaterina Kontar (IACS, IAHS, USA)
Mohsen Ghafory-Ashtiany (IASPEI, IRAN)
Michael Krautblatter (IACS, GERMANY)
Christa von Hillebrandt-Andrade (IAPSO, PUERTO RICO)
George Balasis (IAGA, GREECE)
Roberto Sulpizio (IAVCEI, ITALY)
Kosuke Heki (IAG, China)

Members in Active Advisory Capacity:

Past Chair: Joan Marti (IAVCEI, Spain)
Tom Beer (IAMAS, AUSTRALIA)
Harsh Gupta (IASPEI, INDIA)
Alik Ismail-Zadeh (CMG, GERMANY)
Vladimir Kossobokov (IASPEI, RUSSIA)
Gordon McBean (IAMAS, CANADA)
Ramesh P. Singh (IASPEI, USA)
Stephen McNutt (IASPEI, USA)
Ester Sztein (GSA, USA)

Business Meetings: Prior to the 2023 General Assembly the GRC Executive Committee was informed by the IUGG Governing Board to suspend its planned elections pending a review of the IUGG

Commissions. During the AGU24 in December, 2024, the Committee was informed that the review was completed and that it could resume the renewal of its administration. The Committee intends to review the GRC Terms of Reference and seek recommendations for new representatives of the association and commissions during 2025.

ACTIVITIES

From July, 2024 to the present, the GRC continued its activities with respect to the development of its primary Initiative, the GeTEWS Oceania Initiative. Weekly meetings of the GeTEWS Oceania Working Group via Zoom. All members of the GRC and the GeTEWS Oceania Working Group were invited to participate either during the meetings or via email. Recordings of the meetings were made available when possible.

The Working Group drafted a proposal entitled the **GeTEWS Oceania Initiative** to be presented to **Pacific Community (SPC)** as a project of the **Pacific Geospatial and Surveying Council (PGSC)**. The Working Group is developing a multiagency agreement to support a GeTEWS Oceania Joint Workshop scheduled of November 3-7, 2025 to discuss and hopefully implement the **GeTEWS Oceania Initiative** as project of the **PSGC**.

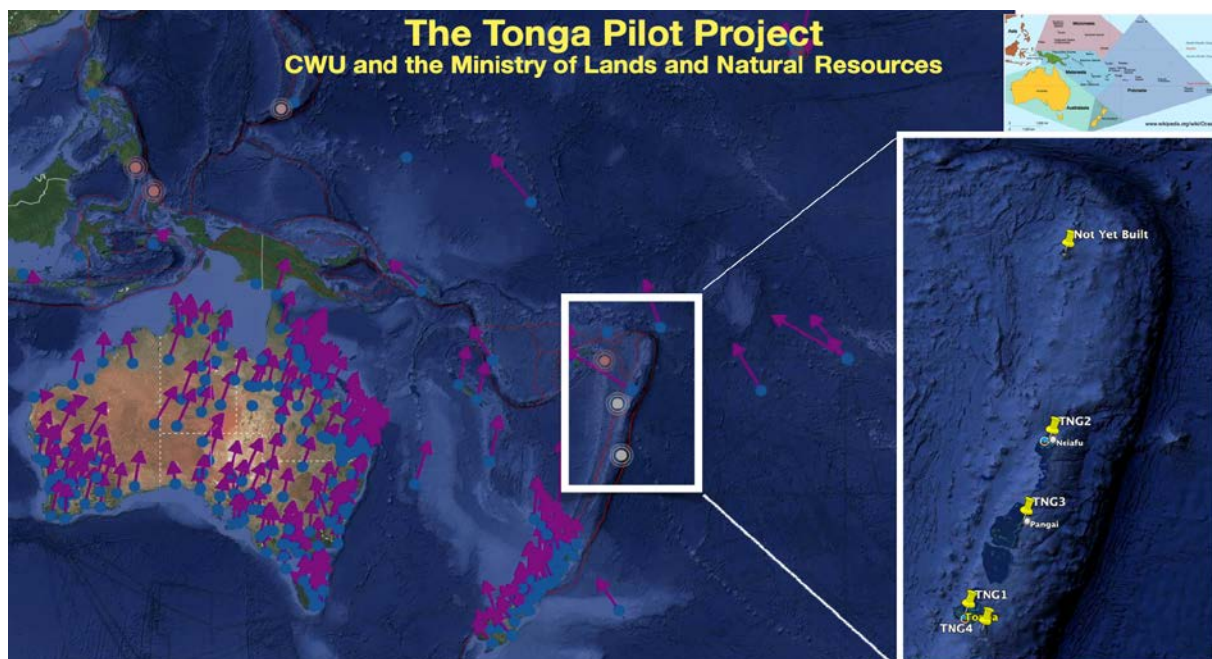
General Assembly Year	Resolution #	Resolution Title
1999	1	Integrated Global Earth Monitoring Systems
1999	2	Geo-Sciences and Society
1999	3	Support of the International Climate and Global Change Programs
2003	1	Geophysical Seafloor Observations
2003	2	Ocean Modelling
2003	3	Integrated Global Geodetic Observing System (IGGOS)
2003	10	Inter-operability and Protection of Global Navigation Satellite System signals
2007	2	Geocentric and International Terrestrial Reference Systems (GTRS and ITRS)
2007	3	Global Geodetic Observing System (GGOS) of the International Association of Geodesy (IAG)
2007	6	The Urgency of Addressing Climate Change
	8	Reduction of Risk from Natural Hazards
2015	1	Role of Ocean in Climate
2015	3	Global Geodetic Reference Frame
2015	4	Real-Time GNSS Augmentation of the Tsunami Early Warning System
2015	6	GeoScience Cooperation
2015	7	Interaction Scientific Activities and Cooperation
2019	2	The International Terrestrial Reference Frame
2023	3	Sharing Geophysical Data across Borders

The GeTEWS Oceania Initiative of the GRC addresses eighteen resolutions of the IUGG General Assemblies since 1999. Resolution #4 of the 2015 General Assembly calls for discussions amongst the IUGG membership concerning GeTEWS development which is the essence of the GeTEWS Oceania Initiative

The Initiative is also conducting two pilot projects.

1. The Tonga GeTEWS Network: This project is a joint effort under the leadership of Villami Folau of the Ministry of Lands and Natural Resources, Kingdom of Tonga and Timothy Melbourne, Central Washington University and Chair of the GeTEWS Oceania Working Group. Four multi-GNSS CORS stations have been installed and a fifth is planned to be installed in early March 2025. The project goal is to understand the challenges of installing nearly 80 such stations within an operational GeTEWS network of networks.
2. Design of the GeTEWS Network of Networks: Lucie Rolland of the Observatoire de la Côte d Azur is leading a design effort for the GeTEWS Oceania network of networks utilizing existing infrastructure wherever possible. The network design seeks to augment existing geospatial efforts such as the Asia-Pacific Reference Frame and other environmental monitoring efforts as well as contributing to national capacity building for the Pacific Islands.

A presentation of the GeTEWS Initiative and its Tonga GeTEWS Network Pilot Project was presented by John LaBrecque at the International Committee on GNSS of the UNOOSA meeting ICG-18 in Wellington, NZ. The presentation was made to the seminar on the Use of GNSS for natural hazard preparedness, resilience and response chaired by Martine WOOLF, Geoscience Australia, Australia. The meeting was well attended by over 200 international representatives of agencies engaged in geospatial research and its applications as well as the provision of GNSS signals and constellations. The presentation was accompanied by presentations from the GNS New Zealand on the advantages and challenges of GeTEWS.



The map displays in purple the real time GNSS streams within the Oceania region provided by Central Washington University. Note the paucity of operating stations within the northern region of Oceania. The five new GNSS CORS stations being developed by the Tonga pilot project of the GeTEWS Oceania Initiative are identified within the mapped inset. Four of the five stations are installed with the fifth to be installed in early 2025. Capacity building by improving the reliability of the streamed data and the availability of the data to Oceania agencies through local agency involvement are the primary objectives of the Tonga pilot project

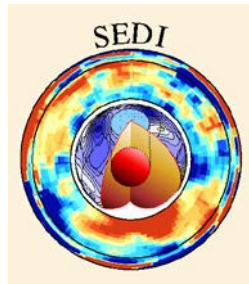
FUTURE ACTIVITIES

The GRC will engage in two principal activities in 2025.

1. The restructuring of the GRC including revised terms of reference and the renewal of the governing structure. The current membership and the leadership of the IUGG Associations and Commissions will be integral to this effort.
2. The effort to implement the GRC's GeTEWS Initiative will continue with the GeTEWS Oceania Joint Workshop. This workshop is expected to utilize the existing financial resources of the GRC treasury as well as contributions from other sources including the South Pacific Community, the IUGG, the Central Washington University and existing and augmenting private contributions to the GeoRisk Commission, Inc.

John LaBrecque, GRC Chair

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



SEDI website: 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. 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, 2) the investigation of core magnetohydrodynamics at all time scales, both from a theoretical point of view and from an observational point of view, and of more general fluid rotational dynamics that can affect the core, 3) the investigation of mantle dynamics, both from a theoretical point of view and observational point of view, 4) the investigation of mechanical, electromagnetic, thermal and chemical interactions between the inner-core, core, mantle, crust and possibly surface fluid layers outer layers, with an aim to develop a global view of the Earth as a system of interacting regions, 5) the thermodynamics of the Earth and the investigation of its long-term thermal evolution.

Since 1987, SEDI has been a Union Commission of the International Union of Geodesy and Geophysics ([IUGG](http://www.iugg.org)). As such, it cuts across the traditional discipline-oriented bounds of many of the Associations of the IUGG [such as the International Association of Geodesy ([IAG](http://www.iag.org)), the International Association of Geomagnetism and Aeronomy ([IAGA](http://www.iaga.org)), the International Association of Seismology and Physics of the Earth's Interior ([IASPEI](http://www.iaspei.org)), and the International Association of Volcanology and Chemistry of the Earth's Interior ([IAVCEI](http://www.iavcei.org))], 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 Mathieu Dumberry (University of Alberta, Edmonton, Canada). The current vice-chair is Lauren Waszek (James Cook University, Townsville, Australia), and with Michael Bergman (Simon's Rock College, Great Barrington, USA) acting as Secretary-General. SEDI has a membership of about 600, as recorded on the email list used to broadcast information related to SEDI activities, upcoming meetings, funding opportunities, and academic openings.

ACTIVITIES

The main activity of SEDI is to organize a meeting every second summer, and a meeting was held this past summer in June 23-28 of 2024. The meeting was held at Bard's College at Simon's Rock, Great Barrington, MA, USA and organized primarily by Michael Bergman. The meeting, as always, was a great success. SEDI meetings offer the perfect setting for lively yet collegial discussions on the state-of-the-art of the scientific topics that animate our community, and this meeting was no different. We

awarded prizes (Doornbos medal) to four early career investigators (Luke Wilson, Felix Gerick, Laura Cobden, Daria Holdenried-Chernoff) for their outstanding contributions to SEDI related research fields. Information about the meeting, including the scientific program, is available at <https://sedi-conference-2024-2675c.ingress-baronn.ewp.live/>.



Group photo of the SEDI 2024 meeting, Great Barrington, MA, USA, 23-28 June 2024

A special issue in the journal *Physics of the Earth and Planetary Interiors* will feature articles related to the research presented at the meeting. Several articles have been submitted so far. The SEDI officers are acting as the editors for this special issue.

We are in the planning phase for the next SEDI meeting, to be held in 2026. We have two possible locations: James Cook University in Jamestown, Australia (local organizer Lauren Waszek) or Shengdu, China (local organizer, Xiaodong Song). An online vote will be conducted among the SEDI membership in the next few weeks to decide the meeting location.

SEDI is sponsoring two sessions at the joint IASPEI-IAGA meeting which will be held in Lisbon, Portugal, from August 31 to September 5, 2025: 1) J01 Structure and evolution of the lowermost mantle and core from observations and modeling; and 2) J09 Remote sensing of decadal dynamical processes of the Earth's interior.

One new SEDI project initiated in 2024 is the development of a *Diamond Open Access* peer-reviewed scientific journal titled "Journal of Studies of the Earth's Deep Interior" (jSEDI) for the SEDI community. This project is pioneered by John Hernlund and Stephane Labrosse, two long time SEDI members. A preliminary version of the journal website can be found at <https://jsedi-preprod.episciences.org>

FUTURE ACTIVITIES

The next event on the SEDI calendar is the online vote that will decide the location of the 2026 SEDI meeting. Once the location is chosen, preparation for the meeting will start, including selecting speakers for the keynote lectures and research talks. The initial phase of this selection process will be undertaken in the fall of 2025.

The other main activity of SEDI in 2025 will be the further development and eventual launch of the journal jSEDI. We will send invitations to a few potential editors in the next few weeks and, shortly after, share our project with the rest of the SEDI community. The plan is to open jSEDI for submission by April 1, 2025.

Mathieu Dumberry, Chair, SEDI
Lauren Waszek, Vice-Chair SEDI
Michael Bergman, Secretary-General, SEDI

Union Commission on Planetary Sciences (UCPS)



UCPS website: <http://202.127.29.4/geodesy/ucps>

INTRODUCTION

The IUGG Union Commission on Planetary Sciences (UCPS) aims to promote and coordinate scientific (physical, chemical, and mathematical) studies of planets in the solar system and around other stars. UCPS intends to advance planetary science through advocacy of solar system and extrasolar exploration, seeking insights on the origin, formation and evolution of planets and systems, including a search for habitable worlds beyond Earth. The UCPS together with other IUGG associations will share knowledge through scientific research and comparative studies between planetary objects and the Earth in the fields of atmosphere, surface and interior science. Additional information about UCPS can be found at <http://202.127.29.4/geodesy/ucps>.

Objectives:

- To advance and foster the study of scientific problems in the planetary sciences;
- To promote and coordinate international cooperation in planetary science, and promote planetary science activities in developing countries;
- To facilitate, on an international basis, discussion and publication of the results of the studies, research and work indicated above;
- To contribute to coordinating activities for future space missions.

ADMINISTRATION

Executive Committee

- Shuanggen Jin (IAG, China) (Chair)
- Nader Haghighipour (University of Hawaii, USA) (Vice-Chair)
- Paul Hartogh (MPI, Germany) (Vice-Chair)
- Scot Rafkin (IAMAS, USA) (Secretary/Treasurer)

ACTIVITIES

- Session: Microwave and Infrared Remote Sensing of Solar System Objects at AOGS 21st Annual Meeting, 23-28 June 2024, Pyeongchang, South Korea.

Conveners:

Dr Paul Hartogh (Max Planck Institute for Solar System Research, Germany)
Dr Scott Bolton (Southwest Research Institute, USA)
Prof Yasuko Kasai (Institute of Science Tokyo, Japan)
Prof Yi-Jehng Kuan (National Taiwan Normal University, Taiwan, China)

- 25-26 July 2024, Shuanggen Jin attended the fourth editorial board meeting of Satellite Navigation and discussed current status and next plans, Beijing, China.



- 2-15 September 2024, Shuanggen Jin was invited to give a lecture at International Training Workshop on BDS Technology and Applications in the Belt and Road Regions, Beijing, China



- 25-26 October 2024, UCPS and Shuanggen Jin organized Forum on Intelligent Sensing and Spacetime Service & Experts Face to Face Dialogue with Nobel Prize Winer Edvard I Moser etc., Jiaozuo, China.



- 10-12 December 2024, Shuanggen Jin was invited to attend International Symposium on Peaceful Use of Space Technology, Haikou, China.



FUTURE ACTIVITIES

- Meeting, 27 July-1 August 2025, Singapore.
Conveners:
Prof Varun Sheel (Physical Research Laboratory, India)
Dr Takeshi Imamura (The University of Tokyo, Japan)
Prof Shuanggen Jin (Henan Polytechnic University, China)
- 2nd IUGG Symposium on Planetary Science (IUGG-PS 2025): New Observations and Advances in Solar System, 2025.

Shuanggen Jin, UCPS Chair

THE INTER-ASSOCIATION WORKING GROUP: Electro-magnetic Studies of Earthquakes and Volcanoes (EMSEV)



EMSEV website: www.emsev-iugg.org/emsev

INTRODUCTION

EMSEV ('Electromagnetic Studies of Earthquakes and Volcanoes') is an Inter-Association Working Group of the [IUGG](#). [IAGA](#), [IASPEI](#), and [IAVCEI](#) powerfully support EMSEV and promote its activities.

EMSEV has continuously investigated earthquakes and active volcanoes and has worked to better understand the physical and dynamic processes. Based on the expertise of a worldwide community of now 401 researchers and students, EMSEV sustains innovative research and findings mainly on electromagnetism (EM), integrating with other geophysical data, especially satellite data, to describe, monitor, analyse, and model earthquakes and volcanoes.

EMSEV objectives are (1) evaluation and endorsement of advanced studies in the electromagnetic field through international cooperation, conferences, and workshops, (2) integration of electromagnetic methods together with other geophysical techniques to identify physical processes on all scales before, during, and after earthquakes and volcanic eruptions, (3) organization and management of international and regional workshops, and (4) participation in educational and field programs relating to observed results and the reduction of the earthquake and volcanic hazards.

ADMINISTRATION

Due to the COVID-19 pandemic, EMSEV has not been able to hold its usual biannual in-person international meeting. In 2024, the EMSEV General Meeting was held in Chania, Greece for the first time in six years.

At this EMSEV2024 meeting, a Bureau business meeting was held to approve a proposed new board structure until the 2026 General Meeting. Six new board members were added, considering national balance and gender issues.

New EMSEV bureau. Current bureau structures are as follows; EMSEV Chair: Toshiyasu Nagao (Japan), Vice Chair: Valerio Tramutoli (Italy) and Qinghua Huang (China), and Secretary: Jann-Yeng Liu (Taiwan).

EMSEV bureau gathers the following association liaison members:

- IAVCEI: Takeshi Hashimoto from Hokkaido University (Japan),
- IASPEI: Qinghua Huang from Beijing University (China),
- IAGA: Jann-Yeng Liu from the National Central University (Taiwan),

At this moment, the **EMSEV** Bureau contains 21 members from 10 countries. Contact details for these Bureau members can be found at: <https://www.emsev-iugg.org/emsev/profile.html> while a full list of **Country Liaison Members**, **EMSEV Members**, and **EMSEV Collaborators** is shown on the primary EMSEV Web link shown at the top of this page.

ACTIVITIES

The most important activity of 2024 was the organization of **EMSEV2024** in Chania, Greece from October 6th to 9th. As mentioned above, it was the first face-to-face meeting for EMSEV in six years (EMSEV 2020 was canceled due to the coronavirus, and EMSEV 2022 in Taiwan was held remotely). This meeting was organized by Professors F. Vallianatos as the local committee chair, with N.V. Sarlis from the University of Athens, as the vice-chair. The meeting was attended by 70 people from 16 countries and regions, and there were 44 oral and 29 poster presentations.

A highlight worth mentioning was a two-day training course for young/new researchers that was held before EMSEV2024 started entitled "**Advances in Space and Ground base studies of Earthquakes and Volcanoes. New Concepts**". Around 10 researchers participated in this event, and lectures were given on the latest research results and analysis methods.

During EMSEV2024, we organized a business meeting to discuss the location and planning for the 2026 EMSEV General Assembly. It was decided that it will be held in Kumamoto, Japan in August 2026 because, 2026 is the 10th anniversary of the (M7.3) Kumamoto Earthquake and also the 15th anniversary of the devastating M9.0 Tohoku Earthquake. You can view the minutes of the business meeting from the following link: <https://www.emsev-iugg.org/BM/EMSEV2024BMminutes.pdf>



EMSEV2024 was held at "Great Arsenal" in the city of Chania, Crete, Greece

OTHER MEETINGS

EGU (Vienna, Austria, 14–19 April 2024)

NH4.1 Short-term Earthquakes Forecast (StEF) and multi-parametric time-Dependent Assessment of Seismic Hazard (t-DASH)

Co-organized by EMRP1/ESSI4/GI5, co-sponsored by JpGU and EMSEV

Conveners: Valerio Tramutoli, Pier Francesco Biagi, Carolina Filizzola, Nicola Genzano, Rachel Grant

JpGU (Chiba, Japan, 26-31 May 2024)

M-IS04, Interdisciplinary studies on pre-earthquake processes

Conveners: Katsumi Hattori, Jann-Yenq Liu, Dimitar Ouzounov, Qinghua Huang

IWEP8 "8th Int'l Workshop on Earthquake Preparation Process - Observation, Validation, Modeling, Forecasting" Chiba, Japan, (May 29-30 2024)

Organizing Committee: Chairperson: Katsumi Hattori, Secretary: Peng Han

Program Committee: Jann-Yenq Liu, Dimitar Ouzounov, Qinghua Huang, Xuhui Shen (National Space Science Toshiyasu Nagao

EMIW2024 (IAGA Division VI - 26th EM Induction Workshop, Beppu, Japan, 7-13 September 2024)

Qinghua Huang selected a keynote speaker, he presented "Data science and machine learning in EM"

<https://www.emiw.org/emiw2024/program/reviewers>

AGU (Washington, D. C., USA, 9013 December 2024)

Interdisciplinary studies on pre-earthquake processes. Towards advancing with models, observations, and AI-enhanced methods (NH28)

Conveners: Dimitar Ouzounov, John B. Rundle, Katsumi Hattori

SSA Annual Meeting (29 April–3 May, Anchorage, Alaska, USA)

Session: Towards Advancing Earthquake Forecasting and Nowcasting: Recent Progress Using AI-Enhanced Methods

Conveners: Yangkang Chen, University of Texas at Austin; Katsumi Hattori, Chiba University; Lisa G. Ludwig, University of California, Irvine; Dimitar Ouzounov, Chapman University; John Rundle, University of California, Davis

ESC The 39th General Assembly (Corfù, Greece, 22 - 27 September 2024)

S02 "Sinergy in advancing the models, observations, and verification toward Operational Earthquake Forecasting."

Conveners: Antonella Peresan, Dimitar Ouzounov, Vladimir G Kossobokov, Angelo De Santis, Gerassimos Papadopoulos, Sergey Pulnits

JOINT INTERNATIONAL ACTIVITIES

Activity on volcanoes (Mt. Fuji, Japan)

In 2024, a new 3-year grant from the Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT) was awarded to establish a new geomagnetic station on Mt. Fuji, with the EMSEV chair as the principal investigator. Using this grant, a geomagnetic station will be established at the southern foot of the mountain.

EMSEV currently has EMSEV Collaborators who are scientists not primarily specialized in electromagnetism, but who are interested in developing new geophysical knowledge and are active in all related research fields related to natural disasters.

One of these members is Professor Kazuyoshi Z. Nanjo. He applied a matched-filter method to low-frequency volcanic earthquakes on Mt. Fuji and found that volcanic earthquakes had increased and changed in structure following a magnitude 5.9 earthquake that occurred almost directly beneath Mt. Fuji four days after the devastating (M9) Tohoku Earthquake (M9). (Nanjo et al., 2023, <https://doi.org/10.1038/s41598-023-37735-4>)

Continuation of Atmospheric field measurement in Kakioka, Japan

For nearly 100 years, Kakioka Geomagnetic Observatory, JMA has conducted atmospheric electric field observations with the classical water-drop type instrument by Lord Kelvin, which ended in February 2021.

EMSEV is supporting these atmospheric electric field observations using a field mill in order to ensure the continuity of observations.

Activity on Taal Volcano, Philippines

In 2020, the Taal volcano in the Philippines had a catastrophic eruption. At that time, all of the electromagnetic observation stations inside and around the volcanic island were destroyed.

Currently, PHIVOLCS is rebuilding a new electromagnetic observation network using their funds, and EMSEV is providing advice on this project.

Satellite-based Earthquake and Volcanic Eruption Prediction Project

In 2018, EMSEV concluded an MOU with the Institute of Crustal Dynamics, China Earthquake Administration (at the time) in China, particularly regarding satellite observation data.

In addition, in recent years, EMSEV has been involved in many activities based on satellite data. EMSEV will continue to support these activities and will have the plan to continue to organize training courses at a biennial EMSEV meeting.

FUTURE ACTIVITIES

In 2025, EMSEV members plan to propose and participate in sessions at IAGA/IASPEI2025 and IAVCEI2025 as well as EGU, JpGU, IWEF, AGU, etc.

In addition, we will begin preparations for EMSEV2026.

T. Nagao, V. Tramutoli, Q. Huang, J-Y Liu, EMSEV bureau members

THE INTER-UNIONS COMMISSION: International Lithosphere Programme (ILP)



ILP website: <https://ilp.nju.edu.cn>

INTRODUCTION

The International Lithosphere Program (ILP) is a joint project of IUGG and IUGS and receives additional funding from member countries (cf. financial report). ILP seeks to elucidate the nature, dynamics, origin and evolution of the lithosphere through international, multidisciplinary geoscience research projects in Task Forces (TF) and Regional Coordinating Committees (CC).

The major ILP themes are: I. Geoscience of global change, II. Contemporary dynamics and deep processes, III. Continental lithosphere, IV. Oceanic lithosphere.

All TF and CC are led by international teams and supported by ILP with 4,000 Euro per year over a period of 5 years. This “seed money” is used by the project leaders to raise additional funds and build strong interfaces with other projects (ICDP, SINOPROBE, TOPO-EUROPE, etc.).

ADMINISTRATION

ILP operates on the base of terms of reference and has an international Bureau. The Bureau meets regularly to monitor the progress and to select new projects in close consultation with the representatives of National Committees. The Bureau is chaired by the President with support from the Secretary General and the Executive Secretary. ILP is supported by a science advisory board and its honorary members. The ILP Secretariat is complementarily located at Nanjing University, China. The 2024 ILP Bureau membership is as follows:

President	H. Thybo	Türkiye/ China/Denmark
Secretary General	M. Liu	USA
Executive Secretary	Q. Wang	China
Representative of IUGG	A. Rudloff	Germany
Representative of IUGG	J. Ludden	France
Chair Committee National Representatives	A. Tibaldi	Italy

The Advisory Board to ILP includes the following members:

S. Dong	China
J. Freymueller	USA
V. Ramos	Argentina
A. Ayele	Ethiopia
K. Asch	Germany

The Bureau is further supported by:

Past President	S. Cloetingh	Netherlands
Honorary President	A. Green	Switzerland
ILP Fellow	J.F.W. Negendank	Germany

ACTIVITIES

ILP had a strong representation at the International Geological Congress (IGC), EGU, DEEP2024, and AGU meetings, where several symposia were co-sponsored by ILP or convened by members of the Task Forces and Coordinating Committees. ILP organised a **workshop/short course for early career scientists on “Interaction of Deep Earth and surface processes”** in Nanjing with ca. 30 participant and four senior guest lecturers, which was sponsored by the Jiangsu Province, China.



Participants at the ILP workshop at Nanjing University, China, on 28-29 October 2024 (left) where Prof. Hassina Mouri (IUGS president) gave Prof. Sierd Cloetingh the Distinguished Lecturer Medal of ILP (right)

The **Evgenii Burov Medal** for 2024 was awarded to Prof. Fabio Capitanio, Monash University, Australia for “his outstanding contributions to studies of Geodynamics on a broad variety of subjects by use of modelling methodologies and high-performance computing, and his noteworthy scientific leadership”.



Prof. Fabio Capitanio with the Evgenii Burov Medal in hand (left) and giving lectures at the ILP workshop in Nanjing (right)

The **Flinn-Hart Award** to an early career scientist was given to Dr. Eszter Békési, Institute of Earth Physics and Space Science, Sopron, Hungary for “her outstanding research and community service, and very promising career path, in particular in the field of geothermal studies of basins and the lithosphere”. Both awardees gave a presentation with overview of their scientific achievements at the Annual ILP Business meeting during EGU24.

A **bureau meeting** was held on 15 April 2024. The president reported on the activities during the past year. The finances keep balance with a planned decrease of the savings, but contribution from national members is not satisfying. A proposal for a new Task Force “2024-TF1 - Lithospheric evolution and tectonic carbon cycle with chairs: Rixiang Zhu,



Dr. Eszter Békési with the Flinn-Hart Award

China; Zhengtang Guo, China; Manuele Faccenda, Italy)” was evaluated and accepted by the bureau. The ILP involvement in DDE (Deep/Time Digital Earth) was discussed and supported, and it was commended that DDE with ILP strengthens connections in Africa.

ILP is more active than ever, with a record number of 15 active projects. The projects include researchers from all continents and represent a broad coverage of lithosphere research. We are in particular pleased that the group of PIs include an increasing number of early career scientists.

FUTURE ACTIVITIES

- Provide support to the Task Forces/Coordinating Committees.
- ILP 45 Years Anniversary symposium and a Town Hall at the IAGA/IASPEI meeting in Lisbon.
- Town Hall and several sessions with TF and CC contributions at EGU25 and AGU 2025.
- Several workshops of individual TFs and CCs are planned.
- ILP Business meeting and meeting of the bureau during the IAGA/IASPEI meeting.
- Rotate members of the Advisory Board
- Meeting between the ILP officers and the new advisory Board.
- Award the E. Burov medal and Flinn-Hart award with lectures at the IAGA/IASPEI meeting.
- Strengthen connection to industry through the most relevant projects.
- Expand the national membership, e.g., with dedicated approach to African countries and Australia.
- Seeking new support from national science foundations and industry.

Budget Request for 2025

To assure continuity and enable us to support the selected Task Forces and Coordinating Committees, we request an IUGG subvention of 15,000.00 USD as in previous years.

Hans Thybo, ILP President

IUGG FINANCIAL REPORT 2024

INTRODUCTION

This report describes the status of the IUGG finances for the year 2024, the first year of the IUGG quadrennium 2024-2027. The [budget](#) for 2024-2027 was approved at IUGG2023 in Berlin. The report will be presented at the coming Bureau meeting in July 2025.

As of 1 January 2025, IUGG has 74 members, of which 60 are paying members representing 279 units. On 1 January 2025, Albania changed from associate member status to cat. 1 paying member status. Otherwise, the membership situation has not changed; for details, see section *Membership information and statistics as of 1 January 2025* below.

The paying members pay membership dues according to their category. Each category is assigned a certain number of units. The price of 1 unit in a given year is calculated using the September value of the U.S. inflator index for the previous year. The high 2022 inflation rate are now down to a level as before 2022. In 2024 the price was USD 2,460/unit close to the budget value of USD 2,455.

There are still some effects remaining in the IUGG finances from the COVID-19 pandemic. In the 2024-2027 quadrennium the budget is made up in such a way that activities postponed during the pandemic is now fully activated which will bring the 2027 balance back to approximately one year's turnover. It appears that the 2024 activities are following that path.

The accounting method is a cash flow system, with the money kept in three bank accounts, USD, EUR and DKK. The 4-year accounting for the whole budget period is more representative for the financial status of the union than the individual accountings year by year. The 2024 accounting is affected by the delayed settlement of the finances of the General Assembly IUGG2023 in Berlin: the grant scheme for IUGG2023 and the head tax put on all participants were paid in 2024. Which then lead to a delayed payment of the 2023 allocations to the associations in 2024, together with the 2024 allocations. A complete overview of the full 2023-2024 allocations is added here as an appendix.

The IUGG accounts are audited by a chartered auditor. A new book-keeping and accounting method will be introduced soon.

The IUGG webmaster is based in Potsdam, Germany. IUGG has signed a contract with Nord Space to do the book-keeping as part of a new financial administrative strategy. Former IUGG Treasurer, Dr. Aksel Walløe Hansen, is hired as a special consultant for the period 2024-2027.

Overview of the report:

- Summary of the IUGG accounts for 2024, in USD
- General remarks and notes
- Overview of IUGG grants and the full allocations in 2024
- Membership information and statistics
- Appendix, the IUGG allocations for 2023-2024 to the associations

SUMMARY OF THE IUGG ACCOUNTS FOR 2024, IN USD



SUMMARY OF IUGG ACCOUNTS 2024

US dollars	Accounts	Budget
RECEIPTS		
1. Membership Subscription	625.003,21	638.300,00
2. Assembly Surcharge	0,00	
3. Royalties	0,00	200,00
4. Miscellaneous		
a. Interest	22.425,59	20.000,00
b. Gain on exchange	9.690,52	
c. Other	1.778,83	
d. Associations, General Assembly surcharge	143.968,33	
5. Total Receipts	802.866,48	658.500,00
6. Cash in hand	0,00	0,00
7. Bank balance on 1/1 2024	1.034.112,08	900.000,00
Check Sum	1.836.978,56	1.558.500,00
EXPENDITURES		
11. Administration		
11.1 Personnel	16.145,32	10.000,00
11.2 Equipment	0,00	1.000,00
11.3 Supplies	494,14	2.000,00
11.4 Communications	493,85	1.000,00
11.5 Accountant	36.994,95	55.000,00
11.6 Travel	44.811,83	70.000,00
11.7 Miscellaneous	34.103,75	5.000,00
12. New initiatives		
12.1 Education and outreach	1.386,73	30.000,00
12.2 Science	68.034,00	50.000,00
13. General Assemblies		
13.1 Organizational expenses	0,00	0,00
13.2 Travel grants	0,00	0,00
14. Symposia	76.568,53	100.000,00
15. Annual allocations		
15.1 Annual allocations	521.850,80	308.750,00
16. Dues and Grants		
16.1 ISC	27.521,27	32.000,00
17. Union activities		
17.1 GRC, SEDI, CMG, UCPS, CCEC	22.700,00	20.000,00
17.2 Inter-Union Science (ILP)	15.000,00	15.000,00
18. Fees		
18.1 Bank fees	2.182,15	3.000,00
19. Contingencies	0,00	2.500,00
20. Loss on exchange	0,00	
21. Total Expenditures	868.287,33	705.250,00
22. Balance on 31/12 2024	968.691,23	853.250,00
Check sum	1.836.978,56	1.558.500,00

US/DKK		
December 31, 2024	Exchange rates Line 8	6,713 =DEC 31, 2023
Niels Andersen/Aksel Walløe Hansen	Line 22	7,158 =DEC 31, 2024
	Other:	6,893 average
US/EUR		
	Line 8	0,901 =DEC 31, 2023
	Line 22	0,960 =DEC 31, 2024
	Other:	0,924 average

GENERAL REMARKS AND NOTES

General Remarks

In 2024 the finances of IUGG is still affected by the COVID-19 pandemic. This is reflected in the bottom line of the summary of the IUGG accounts with total assets close to US\$ 1M, meaning the outgoing 2024 balance is of the same size as two years' normal turnover.

The budget adopted at IUGG2023 is designed to lower the balance by the end in 2027, by allowing a higher expenditure than income for the whole period, resulting in a deficit of almost USD 300K for the whole period 2024-2027. During 2024 the balance was lowered with app. US\$ 65K.

The basic currency of IUGG is USD. Therefore, the summary of the IUGG accounts is shown in USD. It is the sum of three different accounts at Danske Bank in USD, EUR, and DKK, respectively. In addition, IUGG has a Mastercard account, which is mainly used in connection with travelling.

In 2022, financial transactions between Denmark and Russia were stopped in late winter time due to the international sanctions imposed on Russia. This situation is still in operation in 2024.

As part of a new financial strategy with centralizing the finances of IUGG in Copenhagen IUGG is currently hosting several association and commission funds: two associations (IAG, IACS), five commissions (CCEC, SEDI, ESC, IHFC, FDSN) and one interunion programme ILP).

The accounts hosted by IUGG are not included in this report

The new administrative strategy is taking the finances of IUGG into a more professional era.

Notes

Income

Line 1, Membership Subscription

Following the cash-flow system the amount given in the summary is a mixture of late payments for 2023 and even earlier years, regular payments for 2024 plus early payments for 2025.

Line 4.a, Interest

In 2023, Danske Bank again paid interest on the USD account, of the order 2% on an annual basis. This is continued in 2024.

Line 4.b, Gain on exchange

This line, together with the corresponding line 20 (loss on exchange), is used to balance the combined accounts (USD, EUR, DKK) for a particular year. In reality the loss/gain is not realized in the given year. Due to fluctuations in currencies, gains/losses will change from year to year. In the long run, the gains/losses tend to cancel each other. It should also be noted that an averaged exchange rate is used for all account movements within the year.

Line 4.c, Other

This line was introduced in 2020 to handle the payments of some contributions to ILP. Line 4.c should be compared to line 11.7 representing the transfer of all received ILP funds to the special ILP account, see below.

The line is, however, also used for other purposes. For instance, it is used to account for some corrections to the IUGG expenditures of IUGG2023 in Berlin.

Line 4.d, Associations, general assembly surcharge

Normally this line becomes active only in general assembly years like 2023. However, due to the before mentioned delay in 2024 it is used to record the surcharge from the general assembly, which is usually paid to the union instead of going directly to the associations. In 2023 the surcharge was calculated as 6% of the total registration fee paid to the organizers of IUGG2023.

Expenditures

As explained above, because of the cash flow principle used, the accounting for 2023 and again for 2024 is strongly affected by the delay of the final accounting of IUGG2023, from 2023 to 2024.

Line 11.1, Personnel

During 2024, Aksel Walløe Hansen, IUGG treasurer 1999-2019, has assisted the treasurer as a special consultant.

Line 11.5, Accountant

This line represents the payment to the new book-keeping company Nord Space.

Line 11.6, Travel

The major travel cost in 2024 was associated with the Bureau meeting in connection with EGU meeting in Vienna.

Line 11.7, Miscellaneous

The payment of the web master is debited under this line. The line also includes the special insurance against attacks by hackers. The line also covers expenses in connection with promotion activities. The line is also used to account for various miscellaneous payments to/from IUGG, for instance ILP activities.

Line 12, New Initiatives

The line represents IUGG support for two types of initiatives: Co-funding IUGG-related activities of the International Centre for Theoretical Physics (ICTP) and a grant programme to support scientific projects. ICTP didn't receive any funds in 2024. It will be resumed in 2025.

See also the details of lines 12 and 14 below.

Line 14, Symposia

This line is meant to account for grants awarded to workshops and conferences.

See the overview for more details.

Line 15.1, Annual allocations to Associations

The annual IUGG allocation to the associations (50% of the dues paid the year before) is determined after receipt of the financial reports for the previous year. The distribution percentages for the period 2024-2027 and the allocations in 2024 are shown in the following table:

	%	2024 amounts in USD
IACS	9.25	26,524
IAG	13.04	37,391
IAGA	14.01	40,173
IAHS	12.74	36,531
IAMAS	15.85	45,449
IAPSO	11.32	32,459
IASPEI	13.27	38,051
IAVCEI	10.52	30,165
		286,743

As seen in the summary, the allocations were paid together with the equivalent allocations for 2023 due to the delay mentioned earlier. In the actual payments also the net result of the grant scheme for Berlin 2023 plus the head tax calculated as 6% of the total fee paid by delegates in Berlin.

Also included in line is the annual allocation to EMSEV, paid on behalf of IAGA; IASPEI and IAVCEI. In 2024 two years allocation was paid.

From 2024 and onwards the allocation to IACS will no longer be coupled to that of IAVCEI. The allocation will then follow the normal procedure laid out in the IUGG Guidelines.

Line 16, Dues and grants

As usual this line represents the IUGG dues to ISC, International Science Council.

Line 17, Union activities

In 2024 the two IUGG commissions CMG and SEDI received financial support from IUGG.

Line 20, loss on exchange

For details, see the explanatory text for line 4.b.

OVERVIEW OF IUGG GRANTS AND ALLOCATIONS IN 2024

IUGG is supporting science in different ways:

- i) Annual allocation to Associations, line 15
- ii) New initiatives, line 12
- iii) Smaller scientific meetings/workshops, line 14
- iv) Union activities, line 17
- v) Travel grants in connection with General Assemblies, line 13.2

Below, find the main figures for the amounts allocated for the year 2024, in USD:

i) Line 15.1, Associations, see appendix for details			
	8 Associations (here the sum of 2023 and 2024 amounts)		521,851
	See attached appendix for details of the combined 2023 – 2024 payment.		
ii) Line 12, New initiatives			
	Two special awards plus 6 larger projects received funding in 2024		69,421
iii) Line 14, Symposia grants			
	In 2024 15 grants were paid to the principal investigators.		76,569
iv) Line 17, Union activities			
	17.1, CMG and SEDI	22,700	
	17.2, ILP	15,000	
	Total		<u>37,700</u>
v) Line 13.2, Travel grants, General Assemblies			0
Grand total			<u>705,541</u>

MEMBERSHIP INFORMATION AND STATISTICS

On 1 January 2025, IUGG has 74 members, 60 paying members and 14 associate members. The 60 paying members represent 279 units.

On the date of writing this report, 21 May 2025, 15 paying members representing 29 units are in observer status. The total payment received for 2024 only represents the equivalent of 244 units corresponding to 44 paid up members.

In category 1, 9 members, 9 units

Iran (14. year as observer)	special situation
Azerbaijan (10. year as observer)	
Vietnam (9. year as observer)	
Jordan (8. year as observer)	
Mozambique (6. year as observer)	
Algeria (3. year as observer)	
Colombia (2. year as observer)	
Romania (2. year as observer)	
Iceland (1. year as observer)	

In category 2, 5 members, 10 units

Nigeria (10. year as observer)
Saudi Arabia (9. year as observer)
Egypt (6. year as observer)
Pakistan (5. year as observer)
Portugal (1. year as observer)

In category 6, 1 member, 10 units

Russia (3. year as observer)	special situation
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In summary, the membership overview is

Category	No. of members	No. of units/ member	Total units
11	1	35	35
8	3	20	60
7	1	15	15
6	5	10	50
5	3	7	21
4	6	5	30
3	5	3	15
2	17	2	34
1	19	1	19
A	14	0	0
In total	74		279

APPENDIX

THE IUGG ALLOCATIONS FOR 2023-2024 TO THE ASSOCIATIONS

Allocation 2023

Association	percentages 2020 - 2023	2023 amount in USD	EMSEV	2023 allocation in USD
IACS	10,50	\$30.001		\$30.001
IAG	12,56	\$35.888		\$35.888
IAGA	15,10	\$43.145	\$1.000	\$42.145
IAHS	12,55	\$35.859		\$35.859
IAMAS	15,06	\$43.031		\$43.031
IAPSO	10,79	\$30.830		\$30.830
IASPEI	12,94	\$36.973	\$1.000	\$35.973
IAVCEI	10,50	\$30.001	\$1.000	\$29.001
total	100,00	\$285.728	\$3.000	\$282.728

Grant scheme IUGG2023

	IUGG2023 Grants in EUR	IUGG2023 Grants in USD	net grant scheme in USD = green + red
IACS	€ 25.570	\$27.841	\$23.485
IAG	€ 37.454	\$40.780	\$35.336
IAGA	€ 35.349	\$38.488	\$31.411
IAHS	€ 14.349	\$15.623	\$12.672
IAMAS	€ 20.886	\$22.741	\$18.930
IAPSO	€ 20.536	\$22.360	\$20.468
IASPEI	€ 52.351	\$57.000	\$43.029
IAVCEI	€ 14.390	\$15.668	\$14.164
total	\$220.885	\$240.500	\$199.495

Changes to Grant scheme IUGG2023

	Changes to grant scheme	Changes to grant scheme in USD
IACS	€ 4.000	-\$4.355
IAG	€ 5.000	-\$5.444
IAGA	€ 6.500	-\$7.077
IAHS	€ 2.711	-\$2.951
IAMAS	€ 3.500	-\$3.811
IAPSO	€ 1.737	-\$1.891
IASPEI	€ 12.832	-\$13.971
IAVCEI	€ 1.382	-\$1.504
total	€ 37.661	-\$41.005

Head tax IUGG2023

	Head tax in EUR	%-numbers based on delegate numbers agreed on	Head tax in USD
IACS	€ 9.926	7,46	\$10.807
IAG	€ 19.385	14,57	\$21.107
IAGA	€ 17.057	12,82	\$18.572
IAHS	€ 16.299	12,25	\$17.747
IAMAS	€ 28.207	21,20	\$30.712
IAPSO	€ 13.119	9,86	\$14.284
IASPEI	€ 22.339	16,79	\$24.323
IAVCEI	€ 6.719	5,05	\$7.316
IUGG	€ 0	0	\$0
total	€ 133.051	Head tax from IUGG2023: € 133.051	\$144.867

Allocation 2024

	percentages 2024 - 2027	Total = 286.743	2024 allocation in USD
IACS	9,25		\$26.524
IAG	13,04		\$37.391
IAGA	14,01		\$40.173
IAHS	12,74		\$36.531
IAMAS	15,85		\$45.449
IAPSO	11,32		\$32.459
IASPEI	13,27		\$38.051
IAVCEI	10,52		\$30.165
total	100,00		\$286.743

Total transfer in USD = 2023 allocation + grant scheme + head tax + 2024 allocation

	other items	final amounts	
IACS	30.001 - 23.485 + 10.807 + 26.524	\$43.846	paid june 10
IAG		\$59.050	paid may 29
IAGA		\$69.479	paid dec 3
IAHS		\$77.465	paid april 4
IAMAS		\$100.261	paid may 6
IAPSO		\$57.105	paid may 14
IASPEI		\$55.318	paid may 14
IAVCEI		\$52.318	paid may 15
Total		\$514.843	

ADDITIONAL UNION MATTERS

Awards and Honors

International Union of Geodesy and Geophysics (IUGG) – Commission on Mathematical Geophysics (CMG)

Valerio Lucarini (UK) was awarded the 2024 Vladimir Keilis-Borok Medal for ‘his outstanding contribution to mathematical geophysics and development of cutting-edge mathematical theories for understanding the climate system fluctuations and its response to forcing’.

International Association of Hydrological Sciences (IAHS)

Martin Addi (Ghana) was awarded the 2024 Tison Award.

Djim Diongue (Senegal) was awarded the 2024 IAHS Falkenmark Award.

Lena Merete Tallaksen (Norway; Dooge Medal) and **Heidi Kreibich** (Germany; Volker Medal) were awarded the 2024 IAHS-UNESCO-WMO International Hydrology Prize.

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

Minard Pete Hall (Ecuador) and **Jim Kauahikaua** (USA) were awarded the 2024 Honorary Awards.

International Lithosphere Programme (ILP)

Fabio Capitanio (Australia) was awarded the 2024 Evgenii Burov Medal.

American Geophysical Union (AGU)

The AGU, at its 2024 Fall Meeting, awarded the following scientists who have been active in IUGG:

Srinivas V. Bettadpur (USA), President of the IAG Commission 2: Gravity Field (since 2023) was awarded the Charles A. Whitten Medal.

Ian H. Campbell (Australia), Co-Leader of the IAVCEI Commission on Large Igneous Provinces (2004-2013) was awarded the Norman L. Bowen Award.

Christopher J. Davies (UK), Executive Committee Member, Union Commission on the Study of the Earth's Deep Interior (SEDI, since 2021) was awarded the William Gilbert Award.

Eric Donovan (Canada), IUGG Liaison Officer to COSPAR (2012-2015) was awarded Union Fellow.

David W. S. Eaton (Canada), IASPEI National Correspondent (2011-2017) was awarded Union Fellow.

Edward Garnero (USA), Executive Committee Member, Union Commission on the Study of the Earth's Deep Interior (SEDI, since 2016) was named the Beno Gutenberg Lecturer.

Thomas Herring (USA), Service Representative, IAG Executive Committee (since 2012) was awarded the Ivan I. Mueller Award for Distinguished Service and Leadership.

Claire J. Horwell (UK), Leader, IAVCEI International Volcanic Health Hazard Network (IVHHN, since 2018) was awarded the GeoHealth Section Award.

Mioara Manda (France), IUGG President-Elect (2023-2027) was awarded Union Fellow.

Mathieu Morlighem (USA), IACS President-Elect (2023-2025) was awarded Union Fellow.

Yongxin Pan (China), Executive Committee Member, Union Commission on the Study of the Earth's Deep Interior (SEDI, since 2016) was named the Edward Bullard Lecturer.

Simon Michael Papalexiou (Canada), Vice-President, IAHS International Commission on Statistical Hydrology (ICSH; 2012-2015 and since 2023) was awarded the Natural Hazards Early Career Award.

Soroosh Sorooshian (USA), IUGG Fellow (2019) was named the Walter Langbein Lecturer.

Lisa Tauxe (USA), IAGA National Correspondent (2017-2023) was awarded the John Adam Fleming Medal.

Gabriel Andres Vecchi (USA), IAMAS National Correspondent (2017-2023) was awarded Union Fellow.

Dawen Yang (China), Secretary of the IAHS International Commission on Coupled Land-Atmosphere Systems (ICCLAS, 2012-2015) was awarded Union Fellow.

European Geosciences Union (EGU)

The EGU, at its 2024 General Assembly, awarded the following scientists who have been active in IUGG:

Veronique Dehant (Belgium), Member of the Belgian National Committee (1999-2019), was awarded the Jean Dominique Cassini Medal.

Gwenn Flowers (Canada), Head of IACS Division II (2019-2023), was awarded the Julia and Johannes Weertman Medal.

Jeffrey T. Freymueller (USA), Chair of the IUGG National Committee for the USA (2011-2015), was awarded the Vening Meinesz Medal.

Annick Pouquet (USA), Executive Committee Member of the Union Commission on Mathematical Geophysics (CMG; 2019-2023), was awarded the Lewis Fry Richardson Medal.

Others

Lisa Alexander (Australia), IUGG Liaison Officer to the World Climate Research Programme (WCRP) since 2019, was awarded the Copernicus Medal 2024.

Daniel Baker (USA), Member of the IAGA Executive Committee (2007-2011), was awarded the 9th CAS/COSPAR Jeoujang Jaw Award.

Geoffrey Blewitt (USA), President of IAG Commission 1: Reference Frames (2015-2019), was elected member of the National Academy of Sciences of the USA.

Anny Cazenave (France), IUGG Elected Fellow 2019, was elected Honorary Fellow of the Geological Society of India

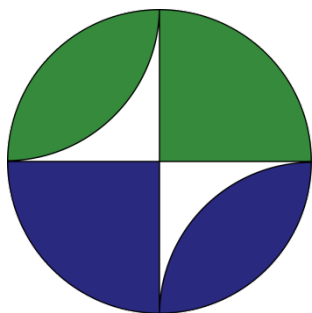
Mioara Manda (France), IUGG President-Elect (2023-2027), was elected Honorary Fellow of the Geological Society of India, and awarded the BRGM Dolomieu Prize of the French Academy of Sciences.

Spiros Pagiatakis (Canada), Chair of the Scientific Programme Committee for the IUGG General Assembly Montréal 2019, was awarded the 2024 J. Tuzo Wilson Medal of the Canadian Geophysical Union.

LIST OF ACRONYMS

AAAS	American Association for the Advancement of Science
AGU	American Geophysical Union
AOGS	Asia Oceania Geosciences Society
APECS	Association of Polar Early Career Scientists
CAST	China Association for Science and Technology
CCEC	Commission on Climatic and Environmental Changes
CCTF	Consultative Committee for Time and Frequency
CEA	China Earthquake Administration
CMG	Commission on Mathematical Geophysics
CNC-IUGG	Chinese National Committee for Geodesy and Geophysics
CODATA	Committee on Data for Science and Technology
COSPAR	Committee on Space Research
CTBTO	Comprehensive Nuclear-Test-Ban Treaty Organization
DFG	German Research Foundation
EGU	European Geosciences Union
EMSEV	IAGA/IASPEI/IAVCEI Inter-Association Working Group on Electromagnetic Studies of Earthquakes and Volcanoes
GEO	Group on Earth Observation
GGOS	Global Geodetic Observing System
GOOS	Global Ocean Observing System
GRC	Commission on Geophysical Risk and Sustainability
IACS	International Association of Cryospheric Sciences
IAEA	International Atomic Energy Agency
IAG	International Association of Geodesy
IAGA	International Association of Geomagnetism and Aeronomy
IAHS	International Association of Hydrological Sciences
IAMAS	International Association of Meteorology and Atmospheric Sciences
IAPSO	International Association for the Physical Sciences of the Ocean
IASPEI	International Association of Seismology and Physics of the Earth's Interior
IAU	International Astronomical Union
IAVCEI	International Association of Volcanology and Chemistry of the Earth's Interior
ICACGP	International Commission on Atmospheric Chemistry and Global Pollution
ICAE	International Commission on Atmospheric Electricity
ICAO	International Civil Aviation Organization
ICCL	International Commission on Climate
ICCP	International Commission on Clouds and Precipitation
ICDM	International Commission on Dynamical Meteorology
ICMA	International Commission on the Middle Atmosphere
ICPAE	International Commission on Planetary Atmospheres and their Evolution
ICPM	International Commission on Polar Meteorology
ICSU	International Council for Science
ICTP	Abdus Salam International Centre for Theoretical Physics
IGCP	International Geoscience Programme
IGOS-P	Integrated Global Observing Strategy Partnership
IGU	International Geographical Union
IHP	International Hydrological Programme
ILP	International Lithosphere Program
INQUA	International Union for Quaternary Research

INTERMAGNET	International Real-time Magnetic Observatory Network
IOC	UNESCO Intergovernmental Oceanographic Commission
IOC	International Ozone Commission
IRC	International Radiation Commission
IRDR	Integrated Research on Disaster Risk
ISC	International Science Council
ISC	International Seismological Centre
ISPRS	International Society for Photogrammetry and Remote Sensing
ISSC	International Social Sciences Council
IUGG	International Union of Geodesy and Geophysics
IUGS	International Union of Geological Sciences
IUSS	International Union of Soil Sciences
IUTAM	International Union of Theoretical and Applied Mechanics
JBGIS	Joint Board of Geospatial Information Societies
NKGG	German National Committee for Geodesy and Geophysics
OECD	Organisation for Economic Co-operation and Development
ÖNK	Austrian National Committee for IUGG
PAIGH	PanAmerican Institute of Geography and History
PHIVOLCS	The Philippines Institute of Volcanology and Seismology
SCAR	Scientific Committee on Antarctic Research
SCOR	Scientific Committee on Ocean Research
SCOSTEP	Scientific Committee on Solar-Terrestrial Physics
SEDI	Study of the Deep Interior of the Earth
UCDI	Union Commission on Data and Information
UCPS	Union Commission on Planetary Sciences
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISDR	United Nations International Strategy on Disaster Reduction
UNOOSA	United Nations Office for Outer Space Affairs
UN-SPIDER	United Nations Platform for Space-based Information for Disaster Management and Emergency Response
URSI	International Union of Radio Science
WCRP	World Climate Research Programme
WDS	ISC World Data System
WMO	World Meteorological Organization
WPMG	Western Pacific Geophysics Meeting
WSF	World Science Forum
VAACs	Volcanic Ash Advisory Centers
VASAG	Joint WMO-IUGG Volcanic Ash Scientific Advisory Group



INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS
UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE

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