



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

## **The IUGG Electronic Journal**

**Volume 24 No. 8 (1 August 2024)**

This monthly newsletter is intended to keep IUGG Members and individual scientists informed about the activities of the Union, its Associations and interdisciplinary bodies, and the actions of the IUGG Secretariat, Bureau, and Executive Committee. Past issues are posted [here](#). E-Journals may be forwarded to those who will benefit from the information. Your comments are welcome.

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### **1. IUGG – The People at the Forefront (XXXVII): Richard S. Gross, President of the International Association of Geodesy (IAG), 2023-2027**

It started with a question: what do you want to be when you grow up? Everybody is asked this, of course, but when it was time to apply to college I started to seriously consider it. I was always interested in understanding how things work. In high school I was good at physics and math. So I became a double physics-math major in college. But by my senior year I knew that modern physics-math was too abstract for me. I wanted to apply my physics training to understand how the Earth works. So for graduate school I entered the geophysics program at the University of Colorado Boulder. At the time, the geophysics program at CU Boulder was based in the Department of Physics with few formal courses in geophysics being offered. So much of my geophysics training was self-taught under the direction of my advisor, Martin Smith.



*Richard S. Gross*

Martin was affiliated with the Cooperative Institute for Research in Environmental Sciences (CIRES), a partnership between CU Boulder

and the National Oceanic and Atmospheric Administration (NOAA). While at CIRES Martin supervised two Ph.D. students, John Wahr and me. As a Ph.D. student at CIRES I worked on two projects. The first was to develop techniques to invert seismic travel times for the velocity structure of the upper mantle. The second was to analyse polar motion values determined by the International Latitude Service (ILS). This second project became the topic of my Ph.D. thesis.

In 1982 I received my Ph.D. and moved to NASA Goddard Spaceflight Center (GSFC) to start a postdoc with David Smith, the head of the Geodynamics Branch at Goddard. While there I continued to study the Earth's rotation, working with Ben Chao to develop techniques to determine the effect of earthquakes on, first, the Earth's rotation and, later, the gravitational field.

Upon the completion of my postdoc at GSFC I accepted a second postdoc with the Geophysics Group at Los Alamos National Laboratory (LANL). At Los Alamos I returned to the topic of travel-time inversion, applying the technique to study the seismic velocity structure of the Rio Grande Rift. Hours before I was to be hired permanently at LANL a hiring freeze was imposed and I needed to quickly find another position. I landed a civilian job with the Geophysics Research Division of the Air Force Technical Applications Center (AFTAC) at Patrick Air Force Base in Florida. There I applied my seismology training to verifying compliance with the Comprehensive Nuclear-Test-Ban Treaty (CTBT).

After a year at AFTAC a position at NASA's Jet Propulsion Laboratory (JPL) became available with the departure of Marshall Eubanks who took a position at the US Naval Observatory. I jumped at the chance to work with Jean Dickey at JPL and moved there in 1988. At JPL I returned to the topic of my Ph.D. thesis and investigated Earth rotation changes. With the launch of the GRACE satellite I began to investigate gravitational field changes. Today, I am Supervisor of the Geodynamics and Space Geodesy Group at JPL where I lead a team that provides combined and predicted Earth orientation parameters to JPL's spaceflight navigation teams. I also lead a team at JPL that is applying sequential estimation techniques to determining terrestrial reference frames.

The IAG is a remarkable organisation with a rich history of global cooperation and scientific achievement. 2024 marks the 162nd anniversary of the founding of the IAG. In 1862, 15 States agreed to cooperate in a 'Central European Arc Measurement' project to observe the shape of the Earth. Besides leading to an improved knowledge of the shape of the Earth, the measurements taken during this project also led to an improved reference frame and geoid for Central Europe. In the course of taking these measurements scientific issues were encountered that also had to be addressed. The spirit of cooperation in both taking operational measurements and conducting scientific research that we have today has been a hallmark of the IAG ever since it was founded in 1862. It is this willingness of the geodetic community to come together and cooperate with each other in order to advance geodetic observations and science that makes working in geodesy such a pleasure. In fact, it is this camaraderie of the geodetic community that first led me to become involved in its activities.

I began my involvement with the IAG by becoming a member of various Working and Study Groups. This led me to become the Chair of the IAG/IAPSO Joint Working Group on Geodetic Effects of Non-Tidal Oceanic Processes. I then became President of IAG Sub-Commission 3.3 on Geophysical Fluids, Vice President and then President of IAG Commission 3 on Earth Rotation and Geodynamics, President of IAG's Global Geodetic Observing System, and finally Vice President and now President of the IAG itself. So in a sense I worked my way up the ranks of the IAG. This involvement in different aspects of the IAG has provided me with a strong foundation upon which to now represent the IAG as its President. I encourage everyone with an interest in geodesy to become involved in the IAG. I am sure that you will find it as rewarding an experience as I have.

## 2. IUGG – Support for 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.



**THE EARTH-HUMANITY  
COALITION**

Sciences for Equitable Well-being on a Healthy Planet

## 3. IUGG – Activities at the COSPAR Scientific Assembly 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.

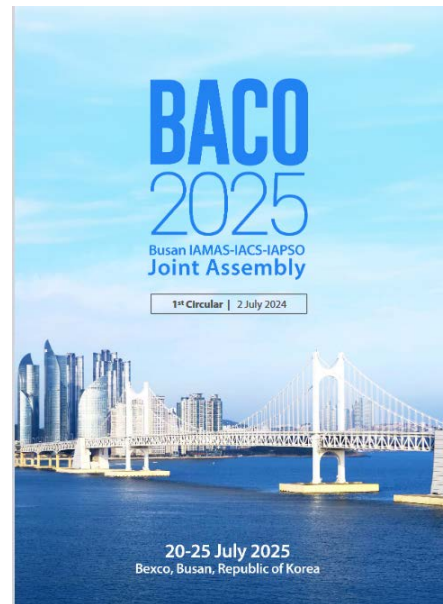
IUGG and IAG are official sponsors of COSPAR2024.

*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*

#### 4. IAMAS-IACS-IAPSO – Joint Assembly 2025: 1st Circular

On behalf of the Local Organising Committee (LOC), we are honoured to host the Busan IAMAS-IACS-IAPSO Joint Assembly 2025 (BACO-25) in Busan, Republic of Korea. I am Kyung-Ja Ha, the LOC Chair and a professor in the Department of Atmospheric Science at Pusan National University.

Korea has achieved remarkable scientific and technological advancements alongside its rapid economic growth. However, the country has also increasingly faced natural disasters, highlighting the global climate change crisis. At this crucial time, when the importance of the Earth's environment is more emphasised than ever, this assembly will serve as a platform to share the latest discoveries in earth sciences and collaborate on strategies to address the challenges of the climate crisis. We anticipate that this event will not only foster academic progress in geosciences but also encourage the participation of young geoscientists from around the world to promote international cooperation programs.



BACO-25 will be organised jointly by the Korean Meteorological Society, the Korean Society of Oceanography, and the Geological Society of Korea, with enthusiastic support from the Korean Government and Busan Metropolitan City, ensuring a professional and successful conference.

BACO-25 will take place from 20 to 25 July 2025. Over these six days, esteemed colleagues from academia, government, and industry worldwide will engage in scientific presentations, discussions, information exchanges, and international cooperation in earth sciences. Participants will enjoy exceptional scientific programs, exhibitions, and exciting supporting events.

Busan, Korea's second-largest city, boasts numerous world-class institutions and universities renowned for earth and ocean sciences research, such as the Korea Institute of Ocean Science & Technology (KIOST), the APEC Climate Center (APCC), the IBS Center for Climate Physics, and the National Institute of Fisheries Sciences. Busan is a dynamic metropolis where modern life harmonises with traditional hospitality. The city offers extensive multilingual signage, efficient public transportation, ICT-based infrastructure, and eco-friendly technologies, making it a convenient place for residents and visitors. Busan is truly a destination of excitement, sensory richness, and warmth.

As an ocean tourism city, Busan features seven beautiful beaches. It is also a city of festivals, hosting events year-round, including the Busan International Film Festival and the Busan International Fireworks Festival. Its close proximity to UNESCO World Heritage sites in Gyeongju and the stunning Jeju Island, just a short flight away, provides unique experiences for international delegates.

On behalf of the LOC, we are preparing a variety of academic and cultural programs to ensure the successful hosting of the BACO-25 Joint Assembly in Korea. We sincerely hope to welcome you to Busan in 2025.

The 1st Circular is now available [here](#).

Kyung-Ja Ha, Chair, Local Organising Committee of BACO-25

## 5. CMG – 34th IUGG Conference on Mathematical Geophysics: Report

The 34th IUGG Conference on Mathematical Geophysics ([CMG2024](#)) was held from 2 to 7 June 2024, at the Indian Institute of Technology Bombay (IITB) in Mumbai, India. The main theme of the conference was *‘Mathematical Geophysics for Sustainable Development’*. CMG2024 was a contribution to the United Nations General Assembly-proclaimed International Decade of Sciences for Sustainable Development (IDSSD; 2024-2033). This conference celebrated the 60th anniversary of the establishment of the IUGG Commission on Mathematical Geophysics ([CMG](#)) in 1964.

At the Opening Ceremony, the conference participants were welcomed by the CMG2024 Chair of the Local Organising Committee Enamundram Chandrasekhar and the CMG Chair Alik Ismail-Zadeh. Then IITB Director Shireesh Kedare, IUGG President-Elect Mioara Manda, IUGG Bureau Member Virendra Tiwari, and the Chief Guest of the conference and former IUGG President Harsh K. Gupta delivered their inaugural addresses. The highlight of the Opening Ceremony was the lecture *‘Metastability properties of the Earth’s Climate: A multiscale viewpoint’* delivered by the 2024 recipient of the Vladimir Keilis-Borok Medal Valerio Lucarini of the University of Leicester, UK.



*The 2024 Vladimir Keilis-Borok crystal medal (left) and Valerio Lucarini delivering the Medal Lecture (right) (Photo credit: E. Chandrasekhar)*

Another remarkable event of the first day was a special session in the memory of Ilya Zaliapin, CMG Secretary (2014-2023), where Zaliapin’s colleagues spoke about his contributions to mathematical geophysics as well as to the development of CMG.

CMG2024 had a tremendous response from scientists and students from many parts of the world, including Australia, Algeria, China, Germany, India, Italy, France, New Zealand, UK, and USA. A total of 94 abstracts were submitted across the four well-defined themes of the conference, comprising 11 technical sessions, grouped into 58 oral and 36 poster presentations. Each technical session presented talks by invited and contributed speakers. Authors of the poster presentations were able to make a one-minute oral presentation of their respective posters; the posters were displayed on all conference days to encourage more discussions. This conference showed truly interdisciplinary research on mathematical geophysics, where recent theoretical advancements in IUGG disciplines and in mathematical methodologies were presented, as well as transdisciplinary research at the nexus of mathematics-climate-economics and implications of the studies to policymaking.

The conference participants enjoyed a mid-conference break when visiting the Elephanta Caves, a United Nations accredited heritage site located on the Elephanta Island. This small island is dotted with numerous ancient archaeological remains (as early as the second century BCE) that are the sole testimonies to its rich cultural past.



CMG2024 group photo (Photo credit: E. Chandrasekhar)

The conference was preceded by a three-day pre-conference workshop on ‘*Computational Geosciences for Sustainable Development*’ (30 May to 1 June). A variety of topics, such as geo-statistics, geospatial technology, mathematical morphology, nonlinear signal analysis techniques, computational geodynamics, geodesy, and seismic tomography were covered in the workshop. Eminent lecturers from India and abroad delivered lectures in the workshop. About twenty students from various colleges and universities from India attended the workshop. Feedback from the participants of the workshop and the conference was positive and their comments will be considered by the CMG Executive Committee.

E. Chandrasekhar, CMG2024 Chair of the Local Organising Committee and  
A. Ismail-Zadeh, CMG Chair

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## 6. CCEC – Report on the 2024 International Forum on Pacific Island Countries Response to Climate Change (PICC 2024), Qingdao, China, 6-7 July 2024

The 2024 International Forum on Pacific Island Countries Response to Climate Change (PICC 2024), held in Qingdao, China from 6 to 7 July, attracted over 100 delegates from more than 10 countries, including China, the United States, the United Kingdom, Spain, Korea, Fiji, and etc. 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).

At the opening ceremony of the forum, Professor Jianping Li, director of the COCN at OUC and chair of the forum, highlighted the vulnerability of PICs to climate change. Ms. Bin Lin, deputy secretary-general of the Communist Party of China Qingdao committee, underscored Qingdao's deepening ties with these countries through high-level visits, sister-city interactions, and economic and cultural exchanges. Professor Yong Liu, vice president of OUC, reiterated the university's dedication to open education and international collaboration to tackle climate change.

The speakers focused on topics such as climate change impacts, sea level rise, blue carbon, Carbon cycle and budget, ocean governance, and sustainable development. Prof. Jianping Li presented a talk on the ‘Impacts of Climate Change on Sea Level Rise in Pacific Island Countries’, detailing the Pacific Island countries are located at the centre of the highest sea level rise historically, currently,

and projected into the future, and warned that more islands will disappear. Prof. Mat Collins from the University of Exeter discussed ‘Tropical Pacific Sea Surface Temperature Patterns and the El Niño Southern Oscillation under Climate Change’, focusing on changing oceanic conditions. Prof. Bibhya Sharma from the University of the South Pacific addressed ‘University of the South Pacific’s Battle Against Bizarre Opponents in the Pacific’, highlighting the university has established the Center for Pacific Sustainability Futures, which aims to accelerate climate change mitigation and enhance resilience and adaptation to its impacts. Prof. Luzhen Chen from Xiamen University reported on ‘Blue Carbon Methodology in China: Tools for the Assessment of Ocean-based Climate Solutions’, introducing methodologies for assessing ocean-based interventions. Prof. Jianping Gan from Hong Kong University of Science and Technology explored ‘Carbon Cycle and Budget in the China Sea: from Dynamics-based Modeling Prospect’, offering insights into carbon dynamics in marine environments. Prof. Pierre Failler from University of Portsmouth shown ‘Blue Economy Development and Climate Change’ and stressed its importance. Prof. Ding He from the Hong Kong University of Science and Technology presented ‘DREAMs: Data-driven appRoaches for Exploring organic geochemistry of Aquatic ecosysteMs’, which focuses on using data to understand aquatic ecosystems. Prof. Sang-Woo Kim from Seoul National University discussed ‘Climatic Impacts of Light-Absorbing Atmospheric Aerosols in East Asian Outflow: Key Findings from Two Decades of Observations’, summarizing twenty years of research. Prof. Blanca Ausín from the University of Salamanca presented on ‘Origin, Transport, and Fate of Proxy Particles in the Ocean: Implications for Paleoclimate Reconstructions’, which involves studying particles for climate history insights. Mr. Dave Hebblethwaite from the Pacific Community (SPC) spoke on ‘Accelerating Pacific Action on Climate, Disaster, and Water Security’, advocating for proactive measures in the Pacific regions.

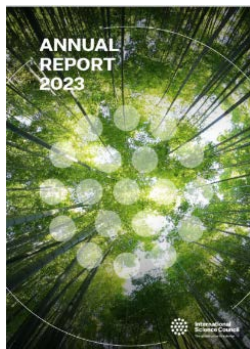


*PICC2024 group photo*

In conclusion, PICC 2024 was a successful event, thanks to the generous co-sponsorship from International Association of Meteorology and Atmospheric Sciences (IAMAS), IUGG Union Commission on Climatic and Environmental Change (CCEC) and other agencies. The forum called for urgent efforts to accelerate climate action and explore solutions to help PICs better cope with climate change and achieve sustainable development.

Jianping Li, Chair of the Local Organising Committee and CCEC Chair

## 7. 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.

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## 8. Awards and Honours

### *International Association of Hydrological Sciences (IAHS)*

The winner of the 2024 IAHS Falkenmark Award for the best PhD thesis (entitled 'Water partitioning in the soil-vegetation-atmosphere continuum in semi-arid regions: Applying mechanistic modelling and water stable isotopes in the Groundnut and Ferlo Bassin, Senegal') is **Djim Diongue** (Senegal)

The award ceremony is scheduled to take place in Florianopolis, Brazil, during the joint IAHS and the Brazilian Association of Water Resources ([ABRHidro](#)) conference from 4-7 November 2024.

### *Canadian Geophysical Union – Union Géophysique Canadienne (CGU)*

**Spiros Pagiatakis** (Canada), Chair of the Scientific Programme Committee for the IUGG General Assembly Montréal 2019, was awarded the [2024 J. Tuzo Wilson Medal](#) – one of the most prestigious medals in Canadian geophysics.

### *Committee on Space Research (COSPAR)*

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

**Congratulations!**

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## 9. Obituaries

With great sadness IUGG reports the death of

**Aleksander Guterch (1936-2023)**, IASPEI National Correspondent of Poland (1999-2011).

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## 10. Meeting Calendar

This calendar includes meetings which are planned to be organised under the umbrella of IUGG, and major conferences of IUGG's partner organisations (in *italics*). The calendar is updated regularly and is also available [online](#). If you would like to add a meeting, or report changes, please contact the [IUGG Secretariat](#).

### August

- 4-11, IAGA, IAPS, Tblisi, Georgia, [ICPS 2024. 38th International Conference of Physics Students](#)
- 6-15, IAU, Cape Town, South Africa, [32nd IAU General Assembly](#)
- 19-23, SCAR, Pucón, Chile, [SCAR Open Science Conference 2024](#)
- 24-30, IGU, Dublin, Ireland, [35th International Geographical Congress](#)
- 25-30, IAG, Strasbourg, France, [20th Geodynamics and Earth Tides Symposium](#)
- 25-31, IUGS, Busan, Rep. of Korea, [37th International Geological Congress](#)

### 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](#)
- 30-4 October, IAGA, Breckenridge CO, USA, [11th VLF and ELF Remote Sensing of the Ionosphere and Magnetosphere \(VERSIM\) Meeting](#)

### October

- October, IAMAS, Qingdao, China, ICCL Conference
- 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](#)
- 8-10, GFZ, Potsdam, Germany, [GRACE/GRACE-FO Science Team Meeting 2024](#)
- 10-11, IAG, Potsdam, Germany, [GGOS Days 2024](#)
- 13-17, IASPEI, UNESCO-IOC, Bodrum, Turkey, [3rd World Conference on Meteotsunamis](#)
- 14-18, IAMAS, Nanjing, China, [ICDM Workshop 2024](#)
- 16-18, SCOR, Qingdao, China, [2024 SCOR Annual Meeting](#)
- 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, GRC, Suva, Fiji, [GeTEWS Oceania 2024](#)
- 4-8, IAVCEI, San Pedro de Atacama, Chile, [1st International Monogenetic Conference](#)
- 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](#)

### **December**

- 9-13, AGU, Washington DC, USA, [AGU Fall Meeting 2024](#)

### **Association Scientific Assemblies 2025**

- 29 June – 4 July, IAVCEI, Geneva, Switzerland, [IAVCEI Scientific Assembly 2025](#)
- 20-25 July, IACS, IAMAS, IAPSO, Busan, Rep. of Korea, [IACS-IAMAS-IAPSO Joint Scientific Assembly 2025](#)
- 31 August – 6 September, IAGA, IASPEI, Lisbon, Portugal, [IAGA-IASPEI Joint Scientific Assembly 2025](#)
- 1-5 September, IAG, Rimini, Italy, [IAG Scientific Assembly 2025](#)
- 5-10 October, IAHS, Roorkee, India, [IAHS Scientific Assembly 2025](#)

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*IUGG Electronic Journal Volume 24 Number 8 (1 August 2024)*

Editors: Franz Kuglitsch, Mioara Mandea, Alexander Rudloff (Editor-in-Chief), and Kathy Whaler.