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Introduction by Greg McFarquhar President, International Commission on Clouds and Precipitation

Summer in the Northern Hemisphere is a time when many IAMAS members who are academic faculty have more time for research, outreach, and conference participation without being overwhelmed by classroom teaching activities. The year 2026 falls between the highly successful IAMAS-IACS-IAPSO Joint Assembly that took place in Busan, Republic of Korea in 2025, and the much-anticipated IUGG General Assembly that will be held in Incheon, Republic of Korea in 2027. Despite this gap year in large IAMAS meetings, a plethora of activities from the different commissions are continuing. For example, the International Commission on Clouds and Precipitation (ICCP) and the International Commission on Tropical Meteorology (ICTM) recently held a very successful joint workshop on “Clouds, Precipitation and Urban Extreme Tropical Weather: The African continent” at the University of Nairobi in July 2026 – see the report later in this newsletter.



This down year of large IAMAS and IUGG assemblies gives an opportunity to reflect on how IAMAS contributes to atmospheric sciences by providing resources for activities involving the next generation of atmospheric scientists and for advancing cooperation between nations in developing innovative solutions to the weather and climate problems that will dominate the rest of this century. IAMAS support is critical to the work of ICCP and the other commissions through its sponsorship of workshops that allow early career scientists and scientists from the developing world to fully participate in meetings, exposing them to the latest ideas, allowing them to develop collaborations with other international scientists, and giving them a chance to present their creative thoughts to the wider community. Although virtual

meetings and activities will inevitably play a large role in the coming years, in-person meetings will continue to be important in forming and maintaining connections between scientists. However, given funding limitations and concerns about carbon footprints, it is likely that many such meetings will have a hybrid component.

As President of ICCP, I wish all a happy summer in the Northern Hemisphere or happy winter in the Southern Hemisphere. I hope that you are having time to decompress while continuing important research that can ultimately offer solutions to societal challenges.

Report on the 10th International Symposium on Space Climate (Space Climate 10)

Wellington, New Zealand

The [10th International Symposium on Space Climate](#) (Space Climate 10) was held in Mariehamn, Åland Islands, Finland from 9 to 12 June 2026. The symposium continued the long-standing Space Climate series, which brings together researchers working on long-term solar variability, heliospheric and geomagnetic processes, and their impacts on the Earth and planetary environments. This year's meeting was highly international, attracting 104 participants representing 58 organisations from 23 countries in Europe, North and South America, Asia, Africa, and Oceania. A total of 109 abstracts were submitted for the meeting. A significant fraction of attendees were early-career scientists, including PhD students and postdoctoral researchers, who constituted approximately one third of all participants.

The symposium was organized into three main scientific themes covering 14 topics dealing with:

- Solar variability (dynamo, long-term evolution of the global structure of solar magnetic fields, long-term TSI (total solar irradiance)/SSI (spectral solar irradiance) variability, solar activity and eruptions in the long-term perspective, solar-stellar relations)
- Heliospheric impacts (cosmic rays and modulation, long-term evolution of coronal mass ejections (CMEs) and solar wind, geomagnetic storms and superstorms, magnetosphere-ionosphere-thermosphere and space climate hazards)
- Terrestrial consequences (extreme events and worst-case scenarios, climate and atmospheric effects, historical proxy, predictability in space climate, space climate on other planets)

Participants highlighted several priority areas for future research, including improving our understanding of extreme space weather events in the historical and geological record, developing more reliable long-term reconstructions of solar activity, and strengthening links between the space climate and space weather communities. The meeting also emphasized the value of international collaboration, open data, and interdisciplinary approaches to address outstanding questions and support future scientific initiatives.

The organizers gratefully acknowledge the financial support provided by IAMAS/ICMA, which significantly increased the participation of young scientists and contributed to the diversity and inclusiveness of the symposium.

Report on the workshop on Directions for Future Research and Applications on Clouds, Precipitation, and Extreme Weather in Africa

The workshop “Directions for Future Research and Applications on Clouds, Precipitation, and Extreme Weather in Africa” was held at the University of Nairobi, Kenya, between July 20 and 24, 2026. Jointly sponsored by the International Commission on Clouds and Precipitation (ICCP) and the International Commission on Tropical Meteorology (ICTM), the workshop had goals of advancing science, strengthening collaboration, and building a weather-ready and climate-resilient Africa. Topics discussed included strengthening collaborations between researchers from Africa and other regions, identifying key scientific questions on cloud processes, urban impacts, and extreme weather in the Tropics, exploring advances in observational networks, radar, satellite applications and AI-driven forecasting, developing strategies to enhance early warning systems and research capacity in Africa, and building opportunities for collaboration and capacity building. A different topic was emphasized on each day of the workshop: 1) clouds, precipitation and weather processes in Africa; 2) observation and modeling of weather systems; 3) urbanization and extreme tropical weather; 4) early warning systems and climate risk communication; and 5) opportunities for collaboration and capacity building. The workshop website is available at <https://www.cloudsfor.africa/home>.

The workshop was attended by 64 individuals from 13 countries in Africa (Benin, Burkina Faso, Cameroon, Cote d’Ivoire, Ethiopia, Ghana, Kenya, Malawi, Niger, Nigeria, South Africa, Tanzania, Uganda), and nine countries outside of Africa (Austria, Belgium, France, Germany, Mexico, Norway, Switzerland, United Kingdom, United States) with substantial support for the travel of African scientists provided by IUGG, IAMAS, and several private companies and government organizations. The workshop consisted of a series of keynote presentations, contributed talks, posters and practicums with training on various subjects. Several potential outcomes may result from the meeting, which could include the following: a monograph describing the state of meteorology in Africa and directions for future research; remote guest lectures in university classes by workshop participants; a program of visits from scientists to/from Africa; planning and pursuit of funding for joint projects and future workshops; a monthly zoom lecture series; and establishment of working groups in the subject areas of the workshop. It is the hope that the workshop can be repeated in a 2-to-3-year time frame.



Participants at the ICCP/ICTM Nairobi workshop.

Report on the International workshop on climate changes assessed by high-resolution global and regional climate models and applications for national hazard assessments

The International workshop on climate changes assessed by high-resolution global and regional climate models and applications for national hazard assessments was held successfully from March 5 to 6, 2026, at the Uji Campus of Kyoto University, Japan. The workshop brought together 87 participants, comprising 58 domestic and 29 international researchers from 15 different countries. Organized by the MEXT (Ministry of Education, Culture, Sports, Science and Technology) Program for the Advanced Studies of Climate Change Projection (SENTAN) research program with support from IAMAS, the event aimed to introduce new climate change projection efforts and impact assessment datasets, share ongoing research results, and facilitate discussion with international experts. The scientific program featured 36 oral presentations divided into 8 sessions, culminating in a special hybrid joint session with the Global Precipitation Experiment (GPEx) under the World Climate Research Project. Additionally, an active poster session featuring 43 presentations stimulated in-depth discussions among the attendees.

The workshop commenced with an overview of the SENTAN program, which aims to generate highly accurate regional climate projections to support local government decision-making. Researchers from Japan highlighted recent updates to large ensemble climate simulations (d4PDFv2) utilizing a 60 km atmosphere resolution and a data-assimilated ocean. Furthermore, non-hydrostatic regional climate model (NHRCM) downscaling experiments targeting 5 km and 2 km resolutions, along with unprecedented 10 km and 2 km ocean large ensembles around Japan were introduced.

The CORDEX community session provided comprehensive updates with a special focus on the latest CORDEX-CMIP6 generation and future CMIP7-driven experiments. Discussions also explored the integration of Machine Learning (ML) techniques with convection-permitting modeling to produce robust, high-resolution downscaled ensembles. Other presentations highlighted regional efforts, including future tropical cyclone projections for East Asia and downscaling initiatives to enhance urban resilience in Southeast Asian megacities.

Focusing on severe weather systems, topics in the tropical cyclones and associated precipitation session included past and future spatial distributions of tropical cyclones. Key topics included how the timing of carbon neutrality significantly controls future typhoon intensity and precipitation over the western North Pacific. Researchers also evaluated the worst-case heavy rainfall events in mid-latitudes associated with tropical cyclones under 4-K warming climates, and compared physical hypotheses for the projected reduction in global tropical cyclone frequency.

The following two sessions covered a broad spectrum of global-to-regional extremes. Presentations addressed summer drying trends in Mongolia, the prediction of the Baiu front, a persistent quasi-stationary weak baroclinic zone, evolution using deep learning models, and changes in rainfall extremes viewed from an event perspective. A major highlight was the focus on operational event attribution in Japan, supported by the newly launched Weather Attribution Center Japan. Researchers presented rapid event attribution results for recent disasters, including the September 2024 heavy rainfall on the Noto Peninsula in northern central Japan, showing significant contributions from global warming. The Post-event Understanding system using Large-ensemble Simulations for Extremes (PULSE) was also introduced to enable near-real-time diagnosis of the physical drivers behind extreme precipitation.

Moving from physical climate science to societal impacts, the impact and hazard studies session emphasized that exposure is not steady but shaped by human choices. Notable presentations examined human-disaster feedbacks, such as the intensifying flood-fire cycle in Sumatra's tropical peatlands. Researchers also presented the FuturePop project, which aims to produce high-resolution maps of future population distributions for various socio-economic scenarios. Additional studies evaluated the effects of global warming on strong wind hazards in Japanese cities, the scaling challenges in assessing climate impacts on Costa Rican coffee yields, and the complex impacts of agricultural irrigation on global climate simulations.

The final oral session was held in a hybrid format, connecting directly with the GPEX venue. Discussions centered on the advances, challenges, and opportunities in limited-area km-scale modeling from the CORDEX perspective, alongside quantitative risk assessments of extreme rainfall events.

An on-site poster session showcased 43 diverse studies. Topics ranged from the detection of non-stationarity in extreme rainfall and the analysis of future hydrological drought, to global wave statistical analysis, high-resolution marine climate change simulations for fisheries, and the development of urban canopy and building energy models.

The workshop was highly productive, offering a valuable platform for researchers to bridge the gap between global climate projections and local hazard assessments. The extensive sharing of large-ensemble datasets, high-resolution downscaling techniques, and novel attribution methodologies is expected to greatly enhance future climate impact studies, ultimately aiding stakeholders in formulating robust adaptation and mitigation strategies.

For more information, please contact the IUGG Secretariat Chair of the Committee (kathy.whaler@ed.ac.uk).



Attendees at the International Workshop on Climate Changes in Uji, Japan.



(left) an oral session and (right) poster session

Report on the workshop on Diabatic Processes Across Scales in the Extra-tropics

More than 70 international scientists gathered outside Vienna during the last week of April 2026 to focus on the impact of diabatic processes across scales in the extra tropics. The [workshop](#) was jointly organized under the auspices of the Working Group on Predictability Dynamics and Ensemble Forecasting of the WMO's World Weather Research Programme and the International Commission on Dynamical Meteorology of IAMAS.

Our fundamental understanding of the impact of diabatic processes on a range of spatial and temporal scales has significantly improved over the recent decades. This includes the impact of diabatic processes on blocking Rossby wave propagation and breaking extratropical and subtropical cyclones, polar lows, jets and tropical-extratropical interactions among many others. The workshop provided an opportunity for the research communities to come together to enhance collaboration and our understanding of how diabatic processes impact various scales and change in a warmer, moister atmosphere. The workshop focused on the impact and implications of different diabatic processes on the dynamic evolution of meso- to planetary-scale weather systems, including cross-scale interactions and geographic linkages. Contributions were based on theory, observations, and modelling (including AI) and in particular the linkages between them. Operational implications of resolving and understanding diabatic processes on predictability on all timescales was also of high relevance.

The workshop concluded with a plenary discussion summarising the recommendations from four breakout groups focusing on diagnostics, data, teaching, and operations. The research community formulated a way forward, highlighting several outstanding challenges and research priorities with the wish to reconvene in a similar workshop setting in around three years.



Participants at the workshop on Diabatic Processes Across Scales in the Extra-tropics.

Preparations for IUGG 2027

The major event for the IAMAS/IUGG community in 2027 will be the [29th IUGG General Assembly](#), which will be held in the Songdo ConvensiA in Incheon, Korea over 16-22 July 2027. IUGG, the associations and the local organisers are working hard to ensure this will be an outstanding meeting that deals with current major issues in the Earth sciences. A high priority is to ensure that the meeting is relevant to the needs of the next generation of scientists and IAMAS will be providing support for a number of early career researchers (ECRs) so they can attend the assembly. We will also be organizing an event specifically for ECRs that will focus on career development, networking and how ECRs can engage further with IAMAS. Communicating our science to the broader community is extremely important and consideration is being given to a symposium on “Education and Outreach in the Geosciences.”



At the time of writing, the list of symposia is being finalised in conjunction with our commissions, the other associations and IUGG. Exact details of the symposia, business meetings and logistical considerations will be released over the coming months and the assembly website should be consulted for the latest information. The broad timetable for activities ahead of the assembly are:

- October 2026 – Early registration opens
- October 2026 – Abstract and travel grant submission opens
- February 2027 – Abstract and travel grant submission closes
- April 2027 – Regular registration opens
- May 2027 – IUGG 2027 official program available

Special issue of Advances in Atmospheric Sciences

Advances in Atmospheric Sciences (AAS) is the associated journal of IAMAS and there is close cooperation between the editors of the journal and IAMAS to ensure that the activities and achievements of the association are promoted within the atmospheric sciences community. As IAMAS was a co-sponsor of the Climate and Cryosphere (CliC) Open Science Conference held in Wellington, New Zealand in February 2026, it has been decided to publish a special issue of AAS with the theme of Climate and Cryosphere. Papers that fall within this field can be submitted to AAS before 10 November 2026 and it should be noted that this is a general call and the papers are not restricted to those presented at the conference. The special issue will serve as a CliC contribution to the Decade of Action for Cryospheric Sciences (2025-2034). [Manuscripts can be submitted online](#) and manuscript type should be selected as “Special issue: Climate and Cryosphere.” Please refer to the [Author Guide](#) for an MS Word or LATEX template, Endnote reference style, and more detailed style instructions.

Activities of the IAMAS Members-at-Large

From Prof. Neil Holbrook, IAMAS Member-at-Large

The ARC Centre of Excellence for the Weather of the 21st Century

The Australian Research Council-funded [Centre of Excellence for the Weather of the 21st Century](#) is dedicated to determining how Australia's weather will change as the global climate warms. The Centre investigates the mechanisms of weather change with the goal of incorporating that understanding into next-generation modelling systems of unprecedented detail, to equip businesses and governments with the knowledge to minimise risk and maximise opportunities from climate change.

The overall Centre aim is to provide Australian society with the knowledge and technology for robust decision-making in response to future weather change. It aims to do this through activities across several [research project themes](#), including: weather systems as related to climate variability and change in a warmer world; weather resources; high impact weather; and modelling science.

Neil Holbrook is one of the [Chief Investigators](#) in the Centre, and has been focusing on the ocean's role in weather, and more specifically on cyclones and weather systems in a changing climate, from tropical to extratropical cyclones. The Centre's focus is well aligned with IAMAS, particularly the activities of ICCL, ICDM, ICTM and ICCP.

Australian Research Council Centre of Excellence for Climate Extremes

Earlier activities of the Australian Research Council funded [Centre of Excellence for Climate Extremes](#) included a workshop convened in May 2023 to advance marine heatwave research, and which was led by Neil Holbrook in his capacity as co-lead of the Ocean Extremes Research Program within the Centre. The workshop, which took place in Moreton Island, Queensland, Australia, focused on three topics: sub-surface marine heatwaves, marine heatwave definitions that include dynamical considerations, and the value of marine heatwave forecasts – the workshop was notably relevant to the interests and activities of the ICCL of IAMAS. Three papers have since been published from this workshop.

News from the IAMAS commissions

The International Commission on Polar Meteorology (ICPM)

The 21st Workshop on Antarctic Meteorology and Climate (WAMC) was held June 16 to 18 in Charleston, South Carolina. The workshop brought together over 80 Antarctic meteorologists of all backgrounds, including weather observing, weather forecasting, weather and climate research, logistics, data archivists, and engineers. Attendees taking part in the hybrid meeting were from around the world, including the United Kingdom, Austria, Brazil, Switzerland, New Zealand, as well as from across the United States. Topics included operational meteorology, observations and data, numerical modeling, forecasting and climatic studies, technical discussions and policy. The workshop reviewed the status of the Antarctic automatic weather station network, plans for the 2026/27 field season, as well as data repository and usage. Numerical modeling developments were outlined, and the latest research were highlights of the event. Planning is underway to hold the 22nd WAMC at the Scripps Institute of Oceanography in June of 2027. Meantime, a manuscript describing the outcomes of the meeting has been submitted for review to *Advances in Atmospheric Sciences* (AAS), the associated journal of IAMAS.

Upcoming meetings

Meetings supported by IUGG are indicated by an asterisk

2026

- The iCACGP-IGAC 2026 conference will take place in Heraklion, Crete, Greece during 7-11 September 2026* See <https://icacgp-igac2026.org/>
- The SCOR annual meeting. Helsinki, Finland, 8-10 September 2026.
- The 4th World Conference on Meteotsunamis will be held in Bath, UK, 14-16 September 2026. More information is available at <https://sites.google.com/view/meteotsunami26/home>
- The 10th International Conference on Fog, Fog Collection and Dew (IFDA 2026) will be held 22–26 September 2026 at the Indian Institute of Tropical Meteorology (IITM), Pune, India. See <https://ews.tropmet.res.in/fogdew26/>
- Atmospheric Processes and their Role in Climate (APARC) General Assembly, Pune, India, 12-16 October 2026. For more information see <https://aparc-climate.org/2026/02/10/aparc-general-assembly-2026/> *
- The 6th International Atmospheric Rivers Conference. 19 – 23 October, 2026, Porto, Portugal. See <https://cw3e.ucsd.edu/iarc2026/>
- The American Geophysical Union annual meeting (AGU26) will take place in San Francisco from 7-11 December 2026. <https://www.agu.org/plan-for-a-meeting/agumeetings>

2027

- The 29th IUGG General Assembly will be held in Incheon, Republic of Korea, 16-22 July 2027. <https://geodesy.science/event/iugg-general-assembly-2027/>

2028

- The next IRC Quadrennial Symposium. Date and location to be confirmed.
- The next Quadrennial Ozone Symposium. Date and location to be confirmed.
- The 20th International Conference on Clouds and Precipitation (ICCP) will be held at the Indian Institute of Tropical Meteorology. The date will be announced in due course.

2029

- IAMAS/IAPSO Scientific Assembly. Manchester, UK. Dates to be confirmed.