



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

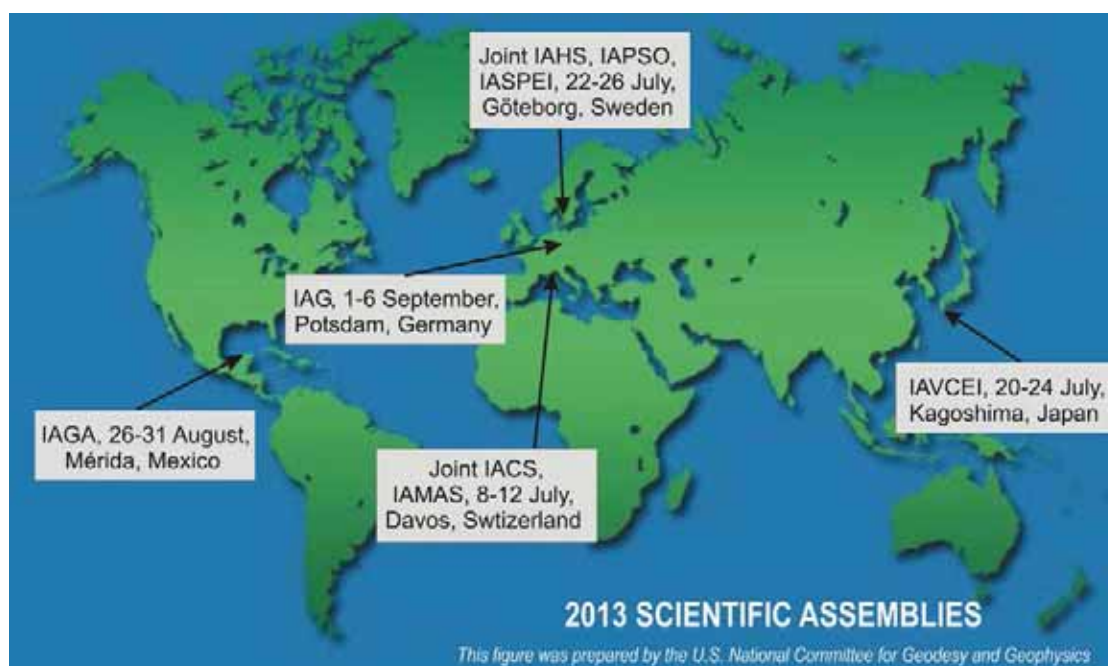
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IUGG Annual Report 2013

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SCIENTIFIC ASSEMBLIES OF THE IUGG ASSOCIATIONS



IACS-IAMAS Scientific Assembly

IACS and IAMAS held their joint scientific assembly DACA-13 (the Davos Atmosphere and Cryosphere Assembly 2013, “Air, Ice & Process Interactions”) from 8 to 12 July 2013 in Davos, Switzerland. The Opening Ceremony combined live music with short presentations and was moderated by Hans Volkert (IAMAS Secretary General) in an entertaining fashion. The majority of more than 950 participants from 52 countries on five continents were welcomed by Charles Fierz and Andrew Mackintosh (IACS President-Elect and Secretary-General), Athena Coustenis (IAMAS President) and Alik Ismail-Zadeh (IUGG Secretary-General). James Screen (UK) received the first IAMAS Early Career Scientist Medal (ECSM). Werner Schmutz and Michael Lehning introduced both scientific institutes of Davos (PMOD/WRC and SLF). Heini Wernli and Anja Schilling recalled the planning of DACA-13 and introduced organizational details.

Scientifically, the assembly covered numerous fields of atmospheric and cryospheric sciences, enriched by snow hydrology, oceanography, natural hazards, economy and risks, and the history of science. These made up an attractive program consisting of 21 mostly joint Symposia featuring several sessions each. More than 350 posters were on display for the whole week while dedicated poster sessions facilitated deeper discussions with the presenters in attendance. Four distinguished scientists delivered well-attended end-of-day keynote lectures, also open to the Davos public: Thomas Stocker started with the topic “*Climate change: Making the best use of scientific information*”; Valérie Masson-Delmotte lectured on “*Water stable isotopes and climate in Greenland, from present-day atmospheric monitoring to glacial-interglacial ice core records*”, Ronald B. Smith presented “*Global aspects of orographic precipitation*”; and Georg Kaser closed the scientific part of the assembly talking about “*The cryosphere after AR5: more knowledge but also more uncertainty*”. All abstracts can be downloaded from www.daca-13.ch/program.

The assembly was highly ranked by the attendees. The quality of both talks and posters was generally considered as excellent, and the environment of Davos and its Congress Centre allowed for easy exchanges between colleagues and experts from different fields. It was a great pleasure to see many early career scientists attending the conference. Competition for the best student poster was fierce, and at the end of DACA-13, six “poster distinctions” were awarded to Fabiano Monti, Franziska Koch, Heather Archambault, Rianne H. Giesen, Saehee Lim, and Narendra Ojha. The cash prizes were

sponsored by the Swiss Meteorological Society (SGM) and the Swiss Snow, Ice and Permafrost Society (SIP).

In addition, the Association of Polar Early Career Scientists (APECS) organized a successful workshop, which, for the first time, considered the needs of early career cryospheric scientists in the Alpine area. Further social events included the Festa Cryospherica at the famous *Schatzalp Hotel*, and the Conference Dinner with over 500 guests in the plenary hall, entertained by a group of traditional musicians. Joyce Penner (IAMAS Vice President) and Andrew Mackintosh (IACS Secretary General) read out together a resolution of thanks to the hosts. All guests warmly applauded the joint organizing team and the considerable group of student helpers.

Since 2009, the Swiss National Organizing Committee (SNOC) chaired by Heini Wernli had meticulously planned this event, strongly supported by the two local Davos institutes, the Physikalisch-Meteorologisches Observatorium Davos / World Radiation Center (PMOD/WRC with Local Organizing Committee chair Werner Schmutz) and the WSL Institute for Snow and Avalanche Research (SLF with Scientific Program Committee chair Michael Lehning). Several generous sponsors helped in staging this event: the Swiss Academy of Sciences, MeteoSwiss, the Federal Office for the Environment, the Canton of Grisons as well as WMO (WCRP, WWRP) and IUGG by awarding travel grants in addition to those provided by IAMAS and IACS.



Intense discussions during a coffee break (photo: M. Senft, PMOD/WRC).

Several commissions and committees of both Associations held business meetings during DACA-13. The IAMAS Executive Committee discussed a resolution about aspects of ‘geo-engineering’ and adopted the bid for a triple-association assembly (IAGA-IAMAS-IAPSO) in Cape Town, South Africa, in 2017. On the weekend after DACA-13, the IACS Bureau interacted with its correspondents, SG and WG chairs, as well as with its partners and stakeholders in a quite interesting open session; it then dealt with other Association matters during a closed session. At the end of two days of intensive discussions, Charles Fierz took office as IACS President, while Ian Allison continues to serve as Past President. The report was received from Charles Fierz (IACS President) and Hans Volkert (IAMAS Secretary General).

~~Strong links have developed with IUGS's GIRAF program in Africa. Anna Nguno, a member of GIRAF, is the new secretary of eGYAfrica. eGYAfrica communicates regularly with IGIRGEA. The eGYAfrica Committee believes that eGYAfrica is too small and would be more effective if it functioned within the framework of a larger, well established group. The two outstanding candidates are the Association of African Universities, and the ICSU Regional Office for Africa.~~

~~Major outcome of the workshop~~

- ~~• Expansion of participating countries from 5 to 12.~~
- ~~• New opportunities for the PingER project to measure the Internet performance in Africa.~~
- ~~• Emerging role for eGYAfrica in providing information and NREN developments.~~
- ~~• Scientists should be better positioned to influence decision makers regarding better Internet capabilities at the working place.~~
- ~~• Reinvigoration of eGYAfrica with new officers and a clear work plan.~~

~~More information about eGYAfrica and the Workshop (e.g., program, participants, presentations) can be found on the eGYAfrica website (<http://egy.org/egyafria.php>). The report was received from Charles Barton, Workshop organizer.~~

Report on the Training School on Impact of Solar Variability on Climate

TOSCA (“Towards a more complete assessment of the impact of solar variability on the Earth’s climate”, <http://www.tosca-cost.eu>) is a multidisciplinary European network of scientists from more than eighteen countries whose objective is to provide a better understanding of the role of the Sun in climate change. This action aims at assessing the various contributions of solar variability to the Earth’s climate by bringing together solar physicists, space scientists, atmospheric scientists, climate modelers, paleoclimatologists, and others. TOSCA organized its first training school in Thessaloniki, Greece, from 10 to 15 March 2013. The objective of this school was to give young scientists a global understanding of the topical but also controversial role of solar variability in climate change. 28 students and early-career scientists from 17 countries attended this school. It was a very diverse group of bright students and young scientists with expertise in various research topics such as lightning and atmospheric electricity, operational space weather, ocean dynamics, geomagnetism, neutron monitors, radiative transfer modelling, regional climate simulations, solar image analysis, and some others. The participation in this school was entirely free of charge, but students were encouraged to contribute at least partly to their travel expenses. Financial support from COST (European Cooperation in Science and Technology), IUGG (IAMS/ICMA), SCOSTEP, and COSPAR enabled participation of more students.



Participants of the School (Photo: T. D. de Wit).

The five-day program featured lectures, a computer class, a poster session, two movies with a debate, and a daily assessment. Lectures addressed various aspects of the Sun-climate connection, with a blend of fundamental physical issues, key questions, and practical aspects such as existing sources of data. Among the lessons learnt were the importance of being pedagogically innovative in order to get

students actively involved rather than having them just listen to the lectures. Another major challenge was how to give a good understanding of a large variety of physical processes to such a diverse audience. This highlighted the importance of conveying information on the basic physical meaning of the processes rather than on specific issues and nomenclature. The debate showed how unprepared we are for bringing scientific concepts to the public, especially when facing opposition. Clearly, more effort should be spent on helping students and lecturers to communicate controversial issues. Received from Thierry Dudok de Wit, on behalf of TOSCA

ICCL 2013 Expert Assessment Workshop on “Decadal Climate Variability and Cross-Scale Interactions”

The International Commission on Climate (ICCL), one of 10 commissions of the International Association of Meteorology and Atmospheric Sciences (IAMAS), organized the Expert Assessment Workshop on “Decadal Climate Variability and Cross-Scale Interactions” in Beijing, China on 16-17 April, 2013. The workshop’s keynote speakers from five countries, including Australia, China, Germany, UK, and USA, delivered themed lectures. About 50 faculty and postgraduate students from the Chinese Academy of Sciences (CAS) and the National Climate Center (NCC) attended the workshop. ICCL Executive Secretary and co-chair of the workshop, Jianping Li from the Institute of Atmospheric Physics (IAP), CAS, presided over the opening ceremony. ICCL President and co-chair Neil Holbrook from the University of Tasmania gave some opening remarks. He outlined the missions of ICCL and introduced the aims of the workshop: (i) to assess and document key issues and knowledge gaps associated with decadal-scale climate variability and cross-scale interactions in a warming world, and (ii) to ask key questions for future research, which was closely related to the upcoming Fifth Assessment Report of Intergovernmental Panel on Climate Change (IPCC AR5) to be released in 2013.



The workshop participants (photo: J. Feng)

The workshop was organized in four sessions: (i) Is the Inter-decadal Pacific Oscillation a real and dynamic feature of the climate system?; (ii) Cross-scale interactions between El Niño-Southern Oscillation (ENSO), decadal variability and anthropogenic climate change; (iii) Unambiguous detection and attribution of anthropogenic climate change above natural decadal to multi-decadal climate variability – how best to do this?; (iv) Decadal modes on regional climates. The keynote talks were given by leading scientists in the field of decadal climate variability, including Matthew Collins (Coordinating Lead Author of IPCC AR5 WG1), Mojib Latif, Thomas Knutson, Emanuele Di Lorenzo, Feifei Jin, Ronghui Huang, Guoxiong Wu, Chognyin Li, Neil Holbrook, and Jianping Li. Scott Power (CLA of IPCC AR5 WG1) gave his talk remotely by phone from Australia. The talks were very well received and initiated intensive discussion after each session. Another highlight of the workshop was that the discussion followed the way IPCC is working, including the assessment and documentation of literature. Speakers and participants agreed on generating potential outcomes in international journals.

The workshop was hosted by the ICCL and organized by the State Key Laboratory of Numerical Modelling for Atmospheric Sciences and Geophysical Fluid Dynamics (LASG/IAP, CAS). Ruiqiang Ding from the IAP was the chair of the Local Organizing Committee. The workshop was co-sponsored by the National Natural-Science Foundation of China (NSFC), China Association of Science and Technology (CAST), LASG/IAP, CAS, National Basic Research Projects, CNC-IUGG, IUGG, and IAMAS. The participants all agreed that the workshop was inspiring and fruitful. It provided a unique platform for exchanges, not only for ICCL members but also for decadal climate variability research communities outside the commission. The report was received from Jianping Li and Neil Holbrook.

Report on the HYDRO ECO 2013 Conference

~~The last decade has been characterized by a growing number of studies at the interface between hydrology and ecology. The interest in coupling hydrological and ecological studies has been triggered by purely scientific questions related to the quantification of the role of interactions between hydrological and biological processes on surface and groundwater resources and quality, but also by the importance of these physical and biological interactions at small, local and regional scales. These scales are of paramount importance for applied environmental issues related to air and water quality or biodiversity dynamics. The first HYDRO ECO conference was held in Karlovy Vary, Czech Republic, in 2006, the second and third conferences in Vienna, Austria, in 2009 and 2011.~~

~~The fourth HYDRO ECO Conference was held in the University of Rennes 1, Rennes, France, 13-16 May 2013. The principal objectives of the fourth conference was (i) to present new findings and approaches on interactions between hydrology and ecology; (ii) to promote interdisciplinary interactions on water related issues between hydrology, hydrogeology, biogeochemistry, microbial ecology, and ecology; (iii) to explore emerging patterns, breakthroughs and challenges; and (iv) to provide management applications and guidelines to tackle environmental issues. The conference brought together more than 200 experts from 44 different countries from the 5 continents with different disciplines such as hydrologists (groundwater, surface water), ecologists, biologists, subsurface microbiologists, environmental biogeochemists, ecotechnologists, geomorphologists, hydraulic engineers, forest managers, nature reserve managers, regional and landscape planners. During four conference days, 11 sessions were organized with 7 plenary talks, 84 oral and 73 poster presentations. The IUGG financial support allowed more scientists to attend the conference by reducing their travel expenses, especially for those coming from Argentina, Botswana, Colombia, Egypt, Iraq, Mongolia, Tanzania, and Tunisia. The conference participants presented and discussed many research topics including:~~

- ~~• three dimensional nature of water fluxes in gaining and losing river reaches to consider the relative importance of hyporheic exchange flows, bank seepage and links to regional groundwater for nutrient supply and processing;~~
- ~~• groundwater – surface water interactions and their potential influence on biogeochemical transformations with the use of controlled laboratory and field experiments;~~
- ~~• combination of hydrological measurements and modeling tools with measurements of biogeochemical transformations to understand (i) the spatial variation in biogeochemical hotspots, and (ii) the controls on respiration and macro invertebrate assemblages along hyporheic exchange flows at the reach and patch scales;~~
- ~~• understanding on how biogeochemical processes scale in landscapes and drainage basins using mathematical frameworks, modeling approaches, and empirical tools;~~
- ~~• discrepancy between space and time scales of observation and space and time characteristics of main hydro-ecological processes; and~~
- ~~• development of climate change scenarios using integrated system analyses, ecosystem services, risk, uncertainty, and ecosystem function.~~

~~The hydro-ecology scientific community has reached the maturity to become one of the key providers of sound science-based solutions to maintain and promote the restoration of aquatic and terrestrial ecosystem functions under global change uncertainties. The next conferences will be held in Vienna, Austria, in 2015 and in Birmingham, UK, in 2017. The report was received from Gilles Pinay, Conference organizer.~~

Report on the 19th International Conference on Nucleation and Atmospheric Aerosols

The 19th International Conference on Nucleation and Atmospheric Aerosols (ICNAA) was held in Fort Collins, Colorado, USA, 24-28 June 2013. This meeting is one of the premier regular (quadrennial) international meetings concerning the formation, physical and chemical properties, transformations and cloud impacts of atmospheric aerosol particles. There were more than 230 attendees from six continents and 27 countries represented. The meeting offered a unique opportunity for young scientists to share research results and have discussions with an international cross-section of experts in their fields. The meeting focused on Nucleation Theory & Experiment, Tropospheric and Stratospheric Aerosols, Cloud Drop and Ice Nucleation, and Aerosol-Climate Interactions. A special session was held on CLOUD (Cosmics Leaving Outdoor Droplets), a project at the CERN facility, which studies the influence of galactic cosmic rays on the Earth's climate through the media of aerosols and clouds. Ten scientists delivered featured conference plenary talks of high current interest.



At the ICNAA conference in Fort Collins, USA (photos: P.J. De Mott)

IUGG co-sponsored travel of students and earlier career scientist to the Conference. The International Advisory Committee of the Conference reviewed 28 applications received for the IUGG travel grants, and awarded five graduate students from Austria, Germany, India, UK/Nigeria, and Sweden. All awardees were first-time conference attendees. Each awardee presented a paper at the conference, three of them orally and two in the well-attended poster sessions that composed eight hours over the first three days of the conference. The conference provided international exposure for awardees in a venue that was intensively focused within their major areas of research. At the same time, the meeting was intimate enough to provide for ample interaction with professional peers from around the world, interactions that will hopefully encourage the awardees to continue their professional development as scientists. The organizing committee of the conference was impressed by the maturity of the awardees, and the energy they brought to sessions through their thoughtful questions. The papers presented at the meeting were published in the conference proceedings: DeMott, P. J., and O'Dowd, C. D., eds. (2013). *Nucleation and Atmospheric Aerosols, 19th International Conference*, AIP Conference Proceedings No. 1527, AIP Publishing, Melville, NY, ISBN: 978-0-7354-1152-4. The report was received from Paul J. DeMott, co-Chair of the 19th ICNAA

Report on the Workshop on Measurement Problems in Ice Clouds

A workshop supported by IUGG was convened on 5-6 July 2013 at the ETH Zurich, Switzerland, to address issues related to ice particles in clouds and precipitation and how these particles impact weather and climate. The specific objectives were: (i) to identify critical, unresolved scientific questions related to the formation and evolution of ice in clouds, (ii) to summarize the uncertainties and limitations of in situ and remote sensors related to measurements of ice cloud properties, and (iii) to assess and evaluate potential approaches to reduce the uncertainties and to minimize the limitations related to measurements of ice cloud properties, including a review of emerging technologies. During the two days of the meeting there were 11 presentations (<http://www.iccp-iamas.org/>) that covered the current state of knowledge with respect to how ice forms in clouds and evolves into precipitation, the

methods available for measuring ice particle properties and the types of models that are presently being employed to evaluate ice processes. Scientists and 12 students from nine countries were represented at the meeting. The proceedings of the workshop were summarized at the Davos Atmosphere and Cryosphere Assembly and will be published sometime in late 2014 as a monograph of the American Meteorological Society. The report was received from Darrel Baumgardner, a workshop organizer.

~~Report on Joint Conference “Facets of Uncertainty”~~



~~Three different series of events, the EGU Leonardo Conference, taking place annually in Europe, the IAHS Statistical Hydrology (STAHY) Workshop, taking place annually in different places of the world, and the Hydrofractals Conference, taking place every ten years, coincided in space and time at Kos Island, Greece, 17-19 October 2013, during the “FACETS OF UNCERTAINTY” meeting. More than 110 scientists from 30 countries attended the joint conference.~~

~~Uncertainty has often been regarded as an opponent of science, whose task is to eliminate it or to reduce it as much as possible. However, it has also been argued that uncertainty is intrinsic in nature, impossible to eliminate, and also a quality with positive aspects. Understanding and quantifying uncertainty could make the understanding of Nature more feasible and its modeling more realistic. Therefore, the focus of the Kos convention was not only to contribute to uncertainty elimination, but to show how modeling can be combined with uncertainty estimation to improve the quality of models and predictions.~~

~~One of the important highlights of the scientific program was the Round Table entitled “*The legacy of Harold Edwin Hurst in hydrological stochastics*”. The British hydrologist H. E. Hurst spent 60 years in studying the Nile for the Egyptian government, during which he laid the foundation of a monumental set of hydrological records and investigations. His studies of the size of reservoir needed to maintain a given supply from natural Nile flow series showed that this was significantly greater than that based on random series. This finding, known as the Hurst phenomenon, was confirmed in other natural series, and in connection with advances in theoretical and practical mathematics and statistics (illustrated by the work of Kolmogorov and Mandelbrot) has been fruitful in many scientific disciplines including economics, electronics and recently climatology. The Round Table, chaired by John Sutcliffe, aimed to celebrate Hurst’s legacy; the participants focused on (a) his life and career, (b) his scientific contribution and (c) the links of his work to the advances to which it gave rise.~~

~~Of significant importance was also the *Poster Session*, held at the archaeological site of Aselepon (see the figure above), a sacred and important monument recognized as a world cultural heritage. About 50 posters were presented and many of the authors gave short oral overviews of their poster, which were recorded and made available online at the IAHS/STAHY web site (<http://www.stahy.org/Events/ReportKOS2013/tabid/115/Default.aspx>). Our team at the National Technical University of Athens tried to combine an interesting scientific program along with pleasant social activities. A high attendance in all sessions continued during the breaks and social events with socializing and networking of the delegates. It was unanimously agreed that it was a successful conference. The report was received from Demetris Koutsoyiannis (Conference Chairman).~~



International Association of Meteorology and Atmospheric Sciences (IAMAS)

<http://www.IAMAS.org>

INTRODUCTION

IAMAS is the specialized association of the International Union of Geodesy and Geophysics (IUGG) that deals with all aspects of the gaseous envelope around the Earth and other planets. The main research work is carried out, coordinated and communicated in IAMAS' 10 International Commissions (IC), which are in alphabetical order 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 Ozone Commission (IOC)
- International Radiation Commission (IRC)

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

ADMINISTRATION

The Bureau and Executive Committee (EC) did not change during 2013. The EC had two regular sessions during the joint Assembly with our cryospheric sister association IACS during the Davos Atmospheric and Cryospheric Assembly (DACA-13; cf. www.daca13.org). Most IAMAS commissions held their business meetings during DACA-13. Barbara Hale (USA) was elected chairwoman of CNAA (cf. below).

During the year Bureau members cooperated closely via email and regular telephone conference calls. President and Sec.-Gen. met in April at EGU in Vienna, Austria, and in September at the IUGG EC-meeting in Prague, Czech Republic. Both also attended in September the IAG-assembly in Potsdam, Germany. Furthermore, the Sec.-Gen. attended as guest the IAPSO EC-meeting in Gothenburg, Sweden (September).



Young scientists on the stage at DACA-13. *Left:* John Screen (UK) receiving the IAMAS Early Career Scientist Medal from president Athena Coustenis during the opening ceremony (photo: M. Senft). *Right:* recipients of young scientist oral and poster presentation prizes during the closing ceremony: Saehee Lim (France), Rianne Giesen (Netherlands), Franziska Koch (Germany), Fabiano Monti (Switzerland), Narendra Ojha (India), Heather Archambault (USA; from left; photo: H. Volkert).

ACTIVITIES

The primary activity of the Sec.-Gen. during the first half of 2013 was representing IAMAS and its commissions in the final planning for DACA-13. He joined four meetings of the Swiss National Organizing Committee, assisted the placement and fine tuning of the 63 topical sessions within 21 scientific symposia, which eventually brought nearly 1,000 participants to the renowned resort of Davos, Switzerland. During the opening ceremony John Screen (Univ. Exeter, UK) was awarded with the first IAMAS Early Career Scientist Medal for his “for his extraordinary contributions to meteorology and atmospheric physics, in particular with respect to the workings of the two polar regions”. The closing ceremony brought six young scientists onto the stage, four women and two men working on three continents, who received Swiss prizes for the best oral and poster presentations (cf. photos above). More details can be found in the IUGG e-journal, Sept. 2013, item 1 (www.iugg.org/publications/ejournals/IUGGej1309.pdf).



Reunion of past and current IAMAS officers on 7 July at DACA-13: five presidents – Michael MacCracken (2003-07), Guoxiong Wu (2007-11), Brian Hoskins (1991-95), Huw Davies (1999-2003; standing, from left); Athena Coustenis (2007-2015) – and two secretaries general – Hans Volkert (2007-2015), Roland List (1995-2007; sitting, from right; photo: F. Darin).

The EC adopted a resolution in recognition of the establishment of “Future Earth” by ICSU (cf. www.iamas.org/Pdfs/IAMAS-Resolution_FutureEarth-2013.pdf), approved a statement on ‘Radiation Management Climate Engineering (cf. <http://www.iamas.org/Pdfs/IAMAS-Statement-RadiationManagement.pdf>), and accepted the South-African bid to host a three association assembly

in Cape Town, South Africa, at the end of August 2017 jointly with the sister associations for aeronomy, IAGA, and the oceans, IAPSO.

Here, a brief selection of activities is reported by IAMAS commissions; the full compilation of commission reports will be posted on www.IAMAS.org/Reports. Information is also available on the specified websites. A brief statement concerning the liaison to SCOR (*Scientific Committee on Oceanic Research*) and to WMO (*World Meteorological Organization*) conclude the report.

IAMAS-ICACGP (www.icacgp.org)

Besides symposia at DACA-13, commission members were actively involved in the organization of the ACCENT-plus conference in Urbino, Italy, in Sept. 2013 (www.accent-network.org/) and in the planning of the 13th quadrennial ICACGP symposium in Aug. 2014 in Natal, Brazil (www.igac-icacgp2014.org/).

IAMAS-ICAE (<http://icae.jp>)

The commission compiled and released Volume 24 of their regular and detailed newsletter (2 issues), organized the publication of a special issue in *Atmospheric Research* (Vol. 135/136, pp. 207-465, containing a preface and 21 articles first presented at 14th ICAE in 2011), and planned their 15th quadrennial ICAE symposium scheduled for 2014 in Oklahoma, USA (<http://icae2014.nwc.ou.edu>).

IAMAS-ICCL (www.iccl-iamas.net)

The commission organized an Expert Assessment Workshop on “Decadal Climate Variability and Cross-Scale Interactions” in Beijing, China on 16-17 April 2013 bringing together 11 keynote speakers from four continents (www.iccl-iamas.net/show.asp?id=21), contributed symposia to DACA-13, and continues to be instrumental in furthering the new IUGG-commission on Climatic and Environmental Change (CCEC; cf. <http://ccec-iugg.org/content/1st-ccec-meeting>).

IAMAS-ICCP (www.iccp-iamas.org)

The commission organized a workshop on “Measurement problems in ice clouds” with 50 participants from nine countries at ETH, Zurich, Switzerland, during the week prior to DACA-13. After intensive discussions about geo-engineering by radiation management a summarizing statement was released (http://www.iccp-iamas.org/pdf/ICCP_RadiationManagement_Statement.pdf), which also served as starting point for a discussion within the IAMAS EC.

IAMAS-ICCP/CNAA (www.icnaa.org)

The Committee on Nucleation and Atmospheric Aerosols held its 19th International Conference on Nucleation and Atmospheric Aerosols in June (<http://chem.atmos.colostate.edu/icnaa>). Barbara N. Hale (Univ. Missouri, USA) took over the committee chair from long serving Colin O’Dowd and Paul DeMott.

IAMAS-ICDM (<http://icdm.atm.ucdavis.edu/ICDM.html>)

The commission organized several symposia at DACA-13. Four new members were elected. Planning continues for an international workshop jointly with ICPM and the WWRP/WMO polar prediction project scheduled for spring 2015 in Norway.

IAMAS-ICMA (www.icma-iamas.org)

The commission contributed to a ‘spring school’ (<http://sun2climate.sciencesconf.org>) in Thessaloniki, Greece and the 11th workshop on layered phenomena in the mesopause region workshop in Leeds, UK (www.lpmr.leeds.ac.uk).

IAMAS-IO3C (<http://ioc.atmos.illinois.edu>)

The commission contributed to symposia at DACA-13, actively supported research initiatives with the Integrated Global Atmospheric Chemistry Observations (IGACO-O₃; cf. www.igaco-o3.fi/en/) and issued two press releases (about geo-engineering and solar radiation management as well as about the Montreal protocol anniversary; cf. http://ioc.atmos.illinois.edu/press/press_releases.html).

IAMAS-ICPAE (www.atm.ox.ac.uk/icpae)

The commission organized symposia at DACA-13, elected new members, and initiated a further special issue in the research journal *Planetary and Space Sciences*.

IAMAS-ICPM (www.icpm-iamas.aq)

The commission co-convened two joint symposia at DACA-13 and is planning and started planning of the Antarctic Meteorological Observing Modelling and Forecasting Workshop (AMOMFW) to be held from 9-11 June 2014 in Charleston, USA.

IAMAS-IRC (www.irc-iamas.org)

The commission published the complete Proceedings from the quadrennial International Radiation Symposium 2012 as Open Access publication (970 pp. in total including a detailed Autor Index; cf. <http://scitation.aip.org/content/aip/proceeding/aipcp/1531>; a limited edition of printed copies was sponsored by NASA). It also co-convened symposia at DACA-13. Commission members took note of the geo-engineering statements by ICCP and IO₃C and endorsed it in full.

Reports of IAMAS liaisons to other organization

SCOR: Athena COUSTENIS attended the 41th SCOR Executive Committee Meeting (Wellington, New Zealand; 25-27 Nov. 2013; cf. www.scor-int.org/mtgs_past.htm). She introduced the activities bundled in the ten IAMAS commissions and identified the closest links to ocean issues within ICACGP via programs as SOLAS (Surface Ocean Lower Atmosphere Study) and IGBP (International Geosphere-Biosphere Programme). She also took on an active role in the reviewing of proposals about new SCOR working groups.

WMO: Hans VOLKERT attended in May 2013 a Management Group meeting of WMO'S Commission of the Atmospheric Sciences in Geneva, Switzerland. He highlighted structural and traditional similarities between WMO and IAMAS and assisted in the early planning of the "The World Weather Open Science Conference", which is scheduled for 16-21 August 2014 in Montreal, Canada (cf. www.wwosc2014.org).

FUTURE ACTIVITIES

Planning for major international meetings in 2014 is well underway, as the quadrennial symposia of ICACGP (in Natal, Brazil) and of ICAE (in Oklahoma, USA). Many members of IAMAS commissions and the executive committee are involved in constructing the programme for the 26th General Assembly of IUGG, scheduled for summer 2015 in Prague, Czech Republic (www.iugg2015prague.com). The next IAMAS assembly will be jointly held with IAGA and IAPSO in Cape Town, South Africa, from 28 August to 2 September 2017.

Submitted by
Hans Volkert, IAMAS Secretary General