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Alik Ismail-Zadeh**

~~Most participants also participated in the symposium of the International Glaciological Society on “Glaciers and ice sheets in a warming climate” held in Fairbanks, Alaska, following immediately the McCarthy course. The timing of both events was deliberately chosen to facilitate course participants to attend both events. Overall, the course received highly positive evaluations. Participants left with a firmer background in glaciology and a great network of contacts. The Workshop was supported by IUGG via IACS. (Received from R. Hoek)~~

~~**Report on the Workshop “Measurement and Uncertainty Assessment of Glacier Mass Balance”**~~

~~The World Glacier Monitoring Service (WGMS) in collaboration with Stockholm University organized a workshop on measurement and uncertainty assessment of glacier mass balance from 9 to 11 July 2012 in Tarfala, Sweden. The workshop built on the results and experience of earlier workshops in Tarfala in 1998 (Fountain et al., *Geografiska Annaler* 81A(4), 461–465, 1999) and Skeikampen, Norway in 2008 (*Annals of Glaciology* 50(50), 2009), with a focus on the re-analysis of glacier mass balances including a (standardized) uncertainty assessment. The meeting was held at the Stockholm University, Tarfala Research Station, in northern Sweden, and brought together 17 representatives of the leading research groups currently working on these issues. The major aims of the workshop were to discuss methods and to identify and quantify related uncertainties of mass balance measurements from the ground, air and space, as well as to provide best practices for the homogenization, validation and re-calibration of (long term) observational series (re-analysis of glaciological and geodetic mass balance series). These goals are based on the following research questions:~~

- ~~• What are sources of potential errors of glacier mass balance measurements, and how are these potential errors considered by glaciological and geodetic methods?~~
- ~~• How can the related uncertainties be quantified?~~
- ~~• What are typical values (ranges) for the systematic and stochastic uncertainties?~~
- ~~• What are the consequences for the comparison of glaciological and geodetic mass balances?~~
- ~~• What are related consequences for the interpretation of glacier mass balance results as indicators of climate change, fresh water resources, and contributors to sea level change?~~

~~The workshop included keynote presentations as input for the subsequent discussions on how to tackle the issues mentioned above. These covered uncertainties and problems related to the direct glaciological method, re-analysis of long term mass balance series and homogenization methods, and co-registration and bias correction of elevation data. Newly available techniques such as airborne laser scanning as well as statistical tools to assess the quality of mass balance series were discussed, too. As a final outcome of the workshop, a joint publication in a peer-reviewed journal (“The Cryosphere”) will be made available as soon as ready. It includes a review based on the expertise of the workshop participants working with long term monitoring mass balance programmes, supplemented with recommendations. The setting of the venue greatly supported the spirit of intensive and constructive discussions during the two workshop days and the excursion day to the renowned and best investigated Storglaciären, with its long term monitoring mass balance series. The workshop was “A Marcus Wallenberg Symposium” sponsored by the Marcus Wallenberg Foundation for International Cooperation in Science and co-sponsored by IUGG through IACS as well as by the International Glaciological Society (IGS). (Received from M. Zemp)~~

Report on the 16th International Conference on Clouds and Precipitation

The International Commission on Clouds and Precipitation (ICCP), which is one of the commissions of IAMAS, held its 16th International Conference on Clouds and Precipitation in Leipzig, Germany, from 29 July to 4 August 2012 (see <http://iccp2012.tropos.de/> or the ICCP webpage: <http://iccp-iamas.org>). Over 670 abstracts were submitted and over 500 people from 34 countries attended the conference. This large number of participants reflects the importance of cloud research in dealing with some of the pressing issues of climate change, weather forecasting and water availability. The importance of this research topic was highlighted recently by the IPCC (International Panel on Climate Change) by identifying clouds as the largest uncertainty in climate prediction. **Changing** cloud

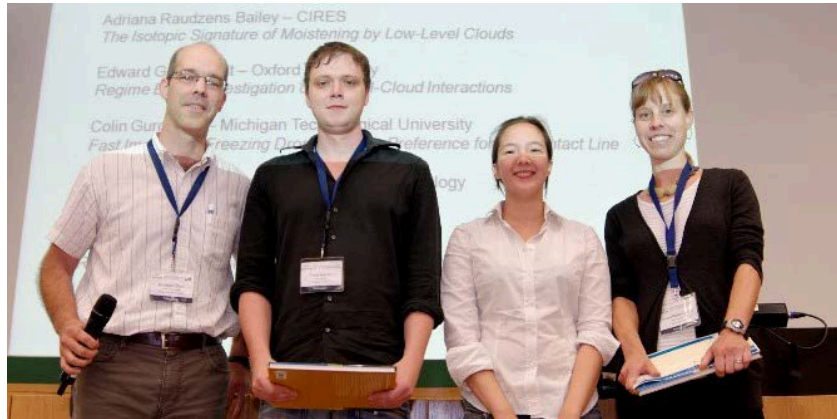
characteristics due to interactions with aerosols have played an important role in the discussions. In addition, many other topics such as the effects of clouds on climate, ice nucleation in clouds, bio-aerosols and their role in cloud processes were among the topics discussed.



Left: Robert Knollenberg during his acceptance speech. Right: John Latham (right) receiving his award from Zev Levin, President of ICCP (photos: Z. Levin).

The program consisted of 13 sessions with oral and poster presentations in each. The sessions included: (i) Basic cloud and precipitation physics; (ii) Warm boundary layer clouds; (iii) Convective clouds (including cloud electrification); (iv) Mixed phase clouds (including Arctic stratus, mid-level clouds); (v) Cirrus clouds; (vi) Orographic clouds; (vii) Mesoscale cloud systems (including severe storms); (viii) Aerosol-cloud-precipitation-interactions; (ix) Clouds and climate (including radiative properties of clouds); (x) Ice nuclei and cloud condensation nuclei; (xi) Cloud and precipitation chemistry; (xii) Measurement techniques of cloud and precipitation properties; (xiii) Applications of cloud and precipitation physics. In addition, a special panel discussion was conducted dealing with geoengineering, its scientific and ethical issues. As part of this discussion, a survey was conducted to learn about the participants' attitude regarding operational versus geoengineering practices. Preliminary analysis indicates that most people favor the continued research efforts but oppose starting operational geoengineering practices before the risks of such operations are clearly understood. During the conference a special award was given to Robert Knollenberg in recognition of his pioneering work in developing the electro-optical spectrometers that revolutionized the measurements of cloud microphysical properties. Knollenberg gave an acceptance speech discussing his personal history as a scientist and encouraging young scientists to take risks when they are young and to consider opportunities in the private industry as an effective path to accomplish innovation.

John Latham was awarded the ICCP Honorary Member in recognition of many years of outstanding scientific contributions to cloud physics and cloud electrification. As part of the acceptance ceremony, Latham gave an after dinner speech with an interesting and humorous look at the way scientists often forget to mention similar works that took place many years prior. Five awards were given to the best posters by students and postdocs.



Three of the five students receiving the best poster award with Robert Shaw (left), the Chairman of the Award Committee (photo: Z. Levin).

The ICCP elected new officers and eleven new members replacing those that completed two terms. The new officers are: Andrea Flossmann (France), President; Robert Rauber (USA), Vice President; and Darrel Baumgardner (Mexico), Secretary. Manchester (UK) was chosen as the site for the next International Conference on Clouds and Precipitation that will be held in summer 2016. (Received from Z. Levin)

~~Report on the 33rd General Assembly of the European Seismological Commission~~

~~The unique geographical position of Russia gave an opportunity for scientists from Europe and Asia to participate in the 33rd General Assembly of the European Seismological Commission (ESC; <http://www.esc2012-moscow.org>), an IASPEI commission. 548 participants including 66 students from 51 countries (including 28 European countries) representing five continents joined the Assembly. This manifests that the Assembly motto “Seismology without Boundaries” proved its value to the full. The scientific program of the Assembly was built according to the major topics of seismology. 845 scientific presentations were given (490 oral and 355 poster presentations) at 39 symposia. Some symposia were organized in cooperation with the Seismological Society of America (SSA) and the Asian Seismological Commission (ASC), another IASPEI commission. Four eminent seismologists gave plenary lectures: Koshun Yamaoka (Japan) on the impacts of the 2011 Tohoku earthquake on seismology and hazard assessments; Ezio Faccioli (Italy) on the recent evolution and challenges in the seismic hazards assessment of the Po Plain region, Northern Italy; Tatiyana Yanovskaya (Russia) on the surface wave tomography for upper mantle studies; and Rajender Chadha (India) on triggered earthquakes.~~

~~The year 2012 is the 60th anniversary of ESC. It is also the 150th anniversary of the birth of academician Boris Galitzin, one of the pioneers of Russian and global seismology, theoretician and inventor of the electrodynamic seismograph. On this event, the Assembly’s Organizing Committee published a booklet presenting the scientific life of Boris Galitzin. Also the 2012-2014 seismological calendar (from the 33rd ESC GA to the 34th) was published to present the history of Russian seismology. It contains unique maps and documents, brief biographies of Imperial Russian, Soviet, and modern Russian seismologists.~~

~~A press conference dedicated to the ESC General Assembly was held on 21 August at RIA Novosti, one of the main Russian news agencies. The participants of the press conference were Alexey Zavyalov (Russia), Chairman of the Local Organizing Committee of the Assembly and ESC Vice-President; Mariano Garcia Fernandez (Spain), ESC Secretary General; Peter Suhadole (Italy), IASPEI Secretary General; Alik Ismail-Zadeh (Russia/Germany), IUGG Secretary General; Rajender K. Chadha (India), ASC Secretary General; and Alexey Malovichko (Russia), Director of the Geophysical Survey of the Russian Academy of Sciences (GSRAS).~~

~~As an accompanying event, the 9th International Young Seismologists Training Course “Modern~~



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' ten 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)
- 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 the 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.

ADMINISTRATION

The Bureau and Executive Committee did not change during 2012, except for the handovers in the *ex-officio* membership. The new commission presidents are Andrea Flossmann (France) for ICCP and Werner Schmutz (Switzerland) for IRC. The Bureau met on 16 November 2012 at the LESIA laboratory, Observatoire de Paris, Paris, France. A day before the meeting, the Bureau met members of the French National Committee and colleagues of IAGA and IAPSO to discuss the plans for a joint General Assembly in 2017. Anja Schilling, the project manager for the upcoming Davos Atmosphere and Cryosphere Assembly (DACA-13), Davos, Switzerland, briefed the participants about the planning status and further steps.

During the year, Bureau members cooperated closely via e-mail and phone calls. In April, the President and the Secretary General met during the EGU General Assembly in Vienna, Austria inter

alia to arrange the Bureau Meeting in November. The Secretary General participated in the major meetings of the commissions ICCP (Leipzig, Germany, July) and ICDM (Kunming, China, August).

The IAMAS Publication Series No.2, entitled “International Ozone Commission: History and activities”, appeared in August. Issue 13 of the IAMAS newsletter was published in December (editor: Scott Hosking; cf., www.IAMAS.org/NewsLetters). The IAMAS website (www.IAMAS.org) was regularly updated and received about 100,000 hits during 2012.

ACTIVITIES

The primary activity of the Secretary General during 2012 was representing IAMAS and its commissions in the planning phase for DACA-13, the next General Assembly jointly organized with IACS. Specific input was provided during two personal visits of Swiss colleagues in Davos and Malans, Switzerland, and by joining several teleconference meetings of the Swiss National Organization Committee.

In the following, brief reports from IAMAS commissions are presented. The full commission reports will be posted on www.IAMAS.org/Reports. The information is also available on the respective commissions’ websites. A brief statement concerning the liaison to SCOR (Scientific Committee on Oceanic Research) and to WMO (World Meteorological Organization) concludes the report. All commissions will be represented at DACA-13. ICMA will also contribute to the IAGA General Assembly in Merida, Mexico.

IAMAS-ICACGP (www.icacgp.org)

The commission was involved in the organization and scientific program of the 12th IGAC Open Science Conference “Atmospheric Chemistry in the Anthropocene” in Beijing, China, 17-21 September 2012 (<http://www.igac2012.org/>). During the event a regular business meeting of the commission was held.

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

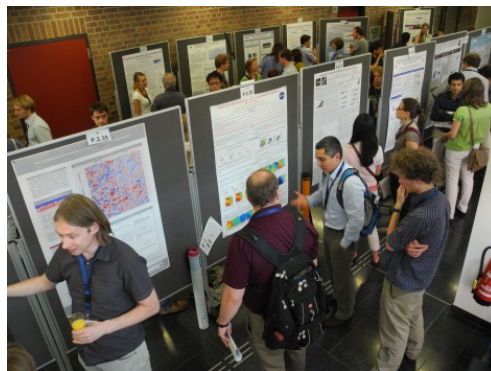
The commission (i) compiled and released Volume 23 of their regular and detailed newsletter (2 issues), (ii) held a preparatory meeting for the “15th International Conference on Atmospheric Electricity” scheduled for 2014 in Oklahoma, USA, (iii) contributed to the organization of sessions at DACA-13, and (iv) organized the special issue ‘Atmospheric Electricity’ in the research journal *Atmospheric Research*.

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

Alongside with an international workshop of ICDM, plans were consolidated about the ICCL Expert Assessment workshop “Decadal climate variability and cross-scale interactions” to be held in Beijing, China in April 2013 (<http://iccl2013.csp.escience.cn/>). The commission also contributed to support the new IUGG Union Commission on Climatic and Environmental Change (CCEC; cf., <http://ccec-iugg.org/>) and to convene symposia at DACA-13.

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

The commission held its quadrennial 16th International Conference of Clouds and Precipitation with more than 500 participants in Leipzig, Germany (<http://iccp2012.tropos.de/>). Two awards and five student prizes were distributed. Regular elections brought into office: Andrea Flossmann as the president, Robert Rauber as the vice-president, and Darrel Baumgardner as the secretary.



ICCP “16th International Conference of Clouds and Precipitation” in Leipzig, Germany, August 2012.
Left: Roland List (IAMAS Secretary General, 1995-2007) and Zev Levin (outgoing ICCP president) exchanging views. Right: lively poster discussion in the foyers (photos: H. Volkert).

IAMAS-ICCP/CNAA

The Committee on Nucleation and Atmospheric Aerosols was engaged with the preparation of its 19th “International Conference on Nucleation and Atmospheric Aerosols” (www.icnaa.org), to be held in Fort Collins, Colorado, USA from 24 to 28 June 2013.

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

The international workshop “Dynamics and Predictability of High-Impact Weather and Climate Events” was held Kunming, China, 6-9 August 2012 (<http://icdm2012.csp.escience.cn>). Some 140 colleagues attended the meeting involving 24 invited lectures, oral and poster presentations. A group photo of the participants including their names is available at www.iamas.org/meetings/ICDM2012-GroupNames.pdf.

At the regular business meeting five new members were elected. The next international workshop is being jointly planned with ICPM to be held in Norway during spring or summer of 2014.

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

The international workshop “Stratospheric sudden warming and its role in weather and climate variations” held in Kyoto, Japan, 22-24 February 2012, (<http://www-mete.kugi.kyoto-u.ac.jp/Kyoto2012/>) was co-sponsored by ICMA.) entitled. More than 100 people (including 50 foreign scientists) attended the meeting. A detailed meeting report was presented by the SPARC-newsletter No. 39 and can be downloaded at www.sparc-climate.org/publications/newsletter. Furthermore two focussed workshops will be supported in 2013, one in Thessaloniki, Greece, the other in Leeds, UK (www.iamas.org/meetings).

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

The commission held its regular Quadrennial Ozone Symposium (www.cmos.ca/QOS2012) with more than 300 participants in Toronto, Canada, during the last week of August. . Besides the broad ranging program, a lifetime achievement award for outstanding service on measurements was given to Archibald Asbridge (Canada). Copies of the IAMAS Publication Series No. 2 were distributed to the participants. On the “Ozone Day”, 16 September, the regular press statement on the “State of the ozone layer” was issued. The “Ozone Gray literature Recovery Effort – OGRE” was started by assembling relevant WMO-documents since 1981 at the website: http://acdb-ext.gsfc.nasa.gov/Documents/O3_Assessments.

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

The commission actively contributed to sessions at major international conferences, e.g. EGU General Assembly 2012 in Vienna, Austria; COSPAR-12 in Mysore, India; AOGS-2012 in Sentosa Island, Singapore. Two joint symposia are planned for DACA-13.

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

In July 2012, the commission organized a well-attended workshop on “Atmospheric Model Parameterization in the Polar Regions”. For DACA-13 contributions are focussed on two joint symposia.

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

The commission held its quadrennial International Radiation Symposium with some 530 participants in Berlin, Germany, 6-10 August 2012 (www.irs2012.org). The *Gold-Medal-Award* was presented to Robert Levy and the *IRC-Young-Scientist-Award* to Kuo-Nan Liou. At the business meeting new officers were elected for the 2012-2016 period: Werner Schmutz (Switzerland) for president; Byung-Ju Sohn (Republic of Korea) for vice-president; Peter Pilewski (USA) for secretary.

Reports of IAMAS liaisons to other organization

SCOR: Athena Coustenis attended the SCOR General Meeting in Halifax, Nova Scotia, Canada, 21-23 October 2012. She introduced the broad variety of research bundled in the ten IAMAS commissions and identified the closest links to ocean issues within ICACGP via programmes as SOLAS (Surface Ocean Lower Atmosphere Study) and IGBP (International Geosphere-Biosphere Programme). She also took on an active role in reviewing proposals about new SCOR working groups.

WMO: Hans Volkert attended the regular Executive Committee meeting of WMO in Geneva, Switzerland, for two days in June, joining his fellow IUGG-liaisons Arthur Askew (for hydrology) and Arnau Folch (for volcanic ash). More details about the meeting can be found in the Liaison Reports of this Annual Report (p. 33). He also accepted an invitation to join the Management Group of WMO’S Commission of the Atmospheric Sciences. In this context “The World Weather Open Science Conference” is being planned to be held in Montreal, Canada, in August 2014.

FUTURE ACTIVITIES

The major event in 2013 will be the Davos Atmosphere and Cryosphere Assembly (DACA-14) jointly held by IAMAS and IACS in Davos, Switzerland, from 8-12 July. 21 symposia will address a broad variety of topics under the general heading “Air, Ice and Process Interactions”. About 800 oral and 400 poster presentations have been submitted. All posters will be displayed for the entire 5-day-event and discussed during five poster sessions without competition of oral presentations in the mid-afternoon.

Regarding the Scientific Assembly in 2017, the Executive Committees of IAGA, IAMAS and IAPSO agreed to hold a triple-association joint assembly. Bids were invited from national committees. Their ranking and the final decision are scheduled during the separate assemblies in summer 2013.

Submitted by
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Hans Volkert, IAMAS Secretary General