



IACS

International Association
of Cryospheric Sciences

<http://www.cryosphericciences.org>

News from IACS

(October 2017)

We would like to thank you for signing up as IACS members. So far about 300 scientists have become members, and this newsletter provides us with an opportunity to explain a little more of what IACS does as an organisation and how you can help us to grow and serve the cryospheric community.

This issue of the IACS newsletter is under the banner of our new logo that was designed jointly with the Secretariat of the International Union of Geodesy and Geophysics ([IUGG](#)), our umbrella organisation.

PAST, PRESENT, AND FUTURE OF IACS

The main source of IACS funding, which we use to further the objectives of the entire cryospheric community, is linked to the number of attendees that sign up as 'IACS' when registering for IUGG General Assemblies. One of most tangible ways that IACS can serve the community is to provide travel grants for early-career researchers to attend our scientific meetings. For example, IACS supported travel grants for 13 early career researchers to attend the 2015 IUGG General Assembly in Prague. Even though the IACS Symposia in Prague were well attended and addressed key scientific questions, only a small crowd of about 300 cryosphere scientists registered. One of our goals for the future is to increase this number, and in this newsletter you will see a few different ways in which you can help to build up the global IACS community, and in particular to help us prepare for the 2019 IUGG General Assembly to be held in Montréal, Canada.

We start this newsletter by briefly outlining several key changes and events that occurred during and following the 2015 IUGG Prague Assembly. First, in Prague the IUGG council agreed to allow individual membership at the Association level. This opens the door to the participation by colleagues that are not from countries adhering to IUGG in IACS bodies at all levels, including the Bureau – except for the position of President. IACS could not adapt its Statutes but at least its Bylaws to match those changes. Second, our Heads of Division having now the possibility to appoint Deputies opens the door for the presence of early career scientists within the Bureau. Anaïs Orsi, Deputy of Division Head Valérie Masson Delmotte, is the first to take such a role and brings fresh wind in our Bureau.

The Prague Assembly also highlighted our dedication towards supporting and encouraging activities. The IACS sponsored Workshop of the Association of Polar Early Career Scientist ([APECS](#)) was a full success among early career and senior scientists. Last but not least, during our Plenary Administrative Session, we not only honoured our freshly elected honorary members Liz Morris, Atsumu Ohmura, and Georg Kaser (joined by Gerry Jones on the picture) but we also celebrated Mathieu Morlighem, the first recipient of the IACS Early Career Scientist Prize.

The second IACS Early Career Scientist Prize was awarded jointly to Rachel Tilling and Thorben Dunse less than two years later during the 2017 IACS Scientific Assembly, 12 -17 February 2017 in Wellington, New Zealand. Indeed, IACS decided to organise its third Scientific Assembly jointly with the International Glaciological Society ([IGS](#)) and Climate and Cryosphere ([CliC](#)), two non-IUGG organisations. Thanks to the dedicated work of IACS Secretary General Andrew Mackintosh and his colleagues of both CliC and IGS, the “Joint International Symposium on the Cryosphere in a Changing Climate” resulted in a well attended and very enjoyable but also stimulating conference. This time IACS granted travel support to 18 recipients, many of which were Early Career Scientists. The conference also benefited from the S.T. Lee Lecture 2016 given by Eric Rignot and a presentation about publishing ‘climate’ papers in Nature by Michael White, Climate science editor for Nature magazine. The mid-week excursion brought the participants across the Ri-



mutaka Range north of Wellington to see the effects of powerful earthquakes on the landscape (see picture above). To learn more about this Scientific Assembly, please have a look at the pleasant report Andrew Mackintosh provided in the [September 2017](#) issue of the [IUGG E-Journal](#). As a consequence of the changes witnessed 2015 in Prague, IACS launched its free membership (join [here](#)) a few days before the conference and quite a few took the opportunity to join. The growing membership of now nearly 300 members engages the IACS Bureau but we also hope for more bottom-up activities within our Association.

After the conference, an important change happened within the IACS Bureau. At the end of the Bureau meeting held 22 February 2017 in Christchurch, NZ, Regine Hock took over the presidency from Charles Fierz. This of course had been duly prepared during the pre-conference tour on Mt Ngauruhoe (top left).



The IACS Bureau relaxing after the meeting (from left to right): Liss M. Andreassen, Ian Allison, Regine Hock, Charles Fierz, Andrew Mackintosh, Cunde Xiao, Hiroyuki Enomoto. Anaïs Orsi, surrounded by her Bureau colleagues on the top right group photo, unfortunately missed that event.

The Bureau is very active under the new leadership as evidenced by the participation of 9 IACS affiliated experts into IPCC activities like scoping meetings or as lead authors for special reports. Indeed, 5 of those experts were successfully nominated by IACS/IUGG through the International Council for Science (ICSU). New Zealand was also the start of a new tweeting era within IACS. Secretary General Andrew Mackintosh now set up an IACS Twitter account ([@iacscryo](https://twitter.com/iacscryo)) ready to be put to good use. Follow us there! IACS will soon refurbish its website, giving it not only a newer face but hopefully also including new functionalities such as Standing and Working Groups managing their webpage by themselves. We thus aim at providing a

common home site to all our bodies. Along the same line of consolidation, IACS very recently moved the archives of its ancestors to the premises of the World Glacier Monitoring Service (WGMS) located at the University of Zurich, Switzerland. The goal is to make documents of interest publicly available as downloadable documents. The Bureau is also currently revising its documents to face the future. Some of these changes will be submitted to the next IACS Plenary Session at the forthcoming 2019 IUGG General Assembly in Montréal. Others will affect, for example, the next Early Career Scientist Prize to be awarded during this IUGG General Assembly sometime between 8 and 19 July 2019. We also expect our members to take active roles as proposers and conveners of exciting scientific sessions to make this 100th anniversary of IUGG a great event for IACS too. Finally, in August 2017, the three IUGG Associations of Cryospheric Sciences (IACS), of Meteorology and Atmospheric Sciences (IAMAS), and for the Physical Sciences of the Oceans (IAPSO) voted unanimously to organise jointly their next Scientific Assembly 2021 in Busan, South Korea.

With this last glance at future IACS activities I'd like to turn to short summaries of other activities not addressed in detail above. So let me start with the backbone of IACS, namely its Working and Standing Groups.

IACS Working Groups (WG)

- The WG "From quantitative stratigraphy to microstructure-based modelling of snow" started 2012 and will close this year. Three workshops in 2013, 2014, and 2015 marked the way of this very active group, activity that culminated in the Intercomparison Workshop organized by Martin Schneebeli March 2014 in Davos, Switzerland. Before closing the Working Group, the WG members are working towards producing final documents about activities of the WG. For example, a special issue of *The Cryosphere* was launched titled "Intercomparison of methods to characterise snow microstructure". One issue the WG could not address yet is the modelling of this microstructure. Members of the WG, however, are putting together a new proposal for a WG to explore the feasibility of a Community Snow Model that would be as physically based as possible, covering snow from its deposition on the surface down to the transition of firn into ice. The model could then serve as a bench mark against which less complex models could be tested.
- Both the WGs "[Randolph Glacier Inventory \(RGI\) and infrastructure for glacier monitoring](#)" and the "[Glacier thickness estimation](#)" were very active since they started to operate. The RGI WG is now preparing the release of version 6.0. The inclusion of RGI outlines into GLIMS is now completed and the WG collaborates closely with WGMS. The Glacier Thickness WG and WGMS collaborate to provide Glacier Thickness data to the community. The WG completed the ITMIX 1 experiment and published a paper in 'The Cryosphere' (<https://www.the-cryosphere.net/11/949/2017/tc-11-949-2017.html>). The WG is now preparing for the second phase of ITMIX (see webpage).
- A multi-organisational WG on Ocean and Ice-sheet Ensembles is in preparation and a full proposal should be submitted soon.

IACS Standing Groups (SG)

- Please visit gaphaz.org, the new website of the SG on Glacier And Permafrost HAZard in mountains. Since the beginning of 2017 the SG has been busy elaborating guidelines for assessment and mapping of glacier and permafrost, and high-mountain hazards. The SG initiated this effort in recognition of an increasing need for guidance of such hazards around the world. This document is a product of years if

not decades of joint expertise and is now very close to a final version.

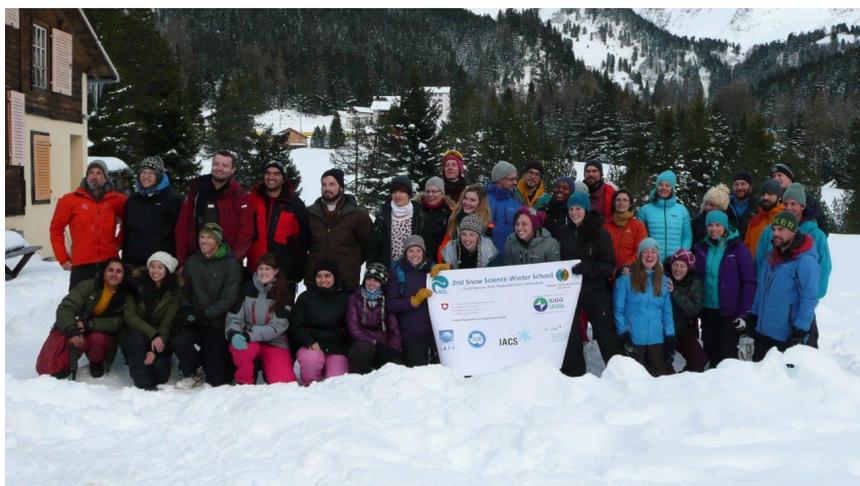
The SG also links IACS to the Union Commission on GeoRisk (M. Krautblatter).

- The GTN-G Steering Committee is an IACS SG whose main task is to coordinate, support, and advise the World Glacier Monitoring Service (WGMS), the National Snow and Ice Data Center (NSIDC), and the Global Land Ice Measurements from Space initiative (GLIMS) concerning the monitoring of glaciers and ice caps. After Cecilie Rolstad Denby stepped down, the new Head of Division ‘Glaciers and Ice Sheets’ Liss M. Andreassen took over as chair. To replace her as group member, Prof. Ben Marzeion and Dr Stephen Briggs agreed to serve on the Advisory board. Both WGMS and GLIMS are very active and keep the SG chair quite busy attending various meetings, the last, a GLIMS meeting, having been held 11-13 August 2017, in Boulder, CO, USA.

IACS sponsored activities

In addition to supporting financially the activities of our WG and SG, we also support events that are of interest to the cryospheric community. Our contributions are primarily aimed at either covering part of the travel costs of attendees (Early Career Scientists (ECS) and scientists from developing countries) or providing IACS awards for outstanding presentations and posters by ECS.

- 2015
 - In collaboration with [ICIMOD](#) and the International Glaciological Society (IGS), IACS sponsored prizes for best poster and oral presentations by students at the IGS International Symposium on Glaciology in High-Mountain Asia, 2-6 March 2015, Kathmandu, Nepal. IACS Secretary General Andrew Mackintosh led the ad hoc Award Committee.
 - [APECS World Summit: The Future of Polar Research](#), 6 - 8 June 2015, Sofia, Bulgaria. IACS contribution helped students from India (2), Russia, Turkey, and Hungary attend the summit. Note that the [2018 APECS World Summit](#) will be embedded in POLAR2018.
- 2016
 - *Second Snow Science Winter School*, 14-20 February 2016, Preda-Davos, Switzerland. The feed-back from the 26 participants from 11 countries was enthusiastic and they provided a special feed-back to IACS and other sponsors (left picture on next page). The event also benefited from an IUGG grant. IACS will again co-sponsor the upcoming [2018](#) 4th edition.



- [WGMS training Course on Mass Balance Measurements and Analysis](#), 10-16 July 2016, La Paz, Bolivia. It was not possible to address the participants in person but a letter of welcome was sent to them.
 - [International Summer School in Glaciology](#), 7-17 June 2016, Wrangell Mountains Center, McCarthy, AK, USA. IACS funding was used to sponsor travel to Alaska for 2 students from India and Nepal. IACS will anew co-sponsor the upcoming 2018 edition.
- 2017



- [International Glacial Seismology Training School](#), 11-17 June 2017, Fort Collins, CO, USA. We got a very enthusiastic feedback from the organisers and IACS is happy to have been able to help some students joining in.
- IACS provided awards for best presentations at the International Workshop on Cryospheric Change and Sustainable Development, 1-2 August 2017, Lanzhou, China. An event report can be found [here](#) on IACS website.

IACS partnerships and collaborations (Bureau activities)

- From 2015 on, IACS Bureau Members kept our partnerships and collaborations alive, in particular with the International Permafrost Association (IPA), the International Arctic Scientific Committee (IASC), the Scientific Committee for Antarctic Research (SCAR), Climate of the Cryosphere (CliC), and the International Glaciological Society (IGS).
- IACS is contributing since 2011 to the development of the WMO cross-cutting initiative Global Cryosphere Watch ([GCW](#)). IACS was asked to join following our wish to contribute to WMO activities related to the cryosphere and in particular because of IACS experience in standards and terminology. I currently represent IACS in various Task Teams and within the GCW Steering Group. After finalising the design of the CryoNet network comprising both research and operational stations and assessing more than 100 applications, work now concentrates on establishing Best Practices, making data exchange possible, and terminology. This is a crucial phase as GCW is due to become operational by 2020 pending approval by the next WMO Congress in 2019. GCW should thus progressively gain more importance within WMO and my goal is to provide the cryospheric community with a possibility to fund long-term monitoring tasks based on this partnership with GCW/WMO. A very small step may be seen in IACS and

GCW both sponsoring the development of the open source software [niViz](#) to record and visualise snow profiles based on the international [IACS/CAAML](#) standard format.

IACS business

- The IACS Executive Committee (EC) consisting of President, Secretary General and Immediate Past President or President Elect runs the 'daily' business regularly holding teleconferences, in which all Bureau members are welcome to join.
- IACS held its 2016 Bureau meeting 'remotely'. The two hour sessions were organised on three consecutive days in June. This modus vivendi required more preparation for all participants but the discussions were very productive and conclusive. All attendees agreed that this is a viable way to organise a Bureau meeting if there is no opportunity to find a suitable place where to meet face to face
- Together with Secretary General Andrew Mackintosh I attended the IUGG Executive Committee meeting June 2016 in Paris, France. There the forthcoming merger of ICSU and ISSC, the need for promoting the upcoming generation of geoscientists, the new logos, etc. were discussed. We coupled this meeting to short encounters with Anil Mishra (UNESCO-IHP), Valérie Masson Delmotte, co-chair of IPCC Working Group I, and with Anais Orsi, our new deputy Head of division IV (Cryosphere, Atmosphere, and Climate). All these meetings were very productive.
- Last September, the IUGG Executive Committee met again in Montréal, Canada. IACS President Regine Hock and Secretary General Andrew Mackintosh attended. The first Scientific Program Committee meeting in view of the 2019 IUGG General Assembly followed that meeting. Secretary General Andrew Mackintosh participated and presented IACS proposals for Joint Symposia.

Charles Fierz and the IACS Executive Committee.

25 October 2017