

IACS (International Association of Cryospheric Sciences)

Activities' Report - Year 2022

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1. Introduction

The International Association of Cryospheric Sciences (IACS) is the youngest of the associations within the IUGG. In 2007, at the General Assembly in Perugia, Italy, IACS became the eighth association within the IUGG as transformed by the International Commission on Snow and Ice of the IAHS.

One of the main objectives of IACS is to support cryosphere science by promoting and sponsoring workshops and symposia organized by its divisions, working groups, as well as by other organizations.

In February 2019, the new IACS Website was opened: <https://cryosphericosciences.org/>

The IACS Bureau posts an "IACS NEWSLETTER" which reports on IACS activities and is downloadable in pdf format from the website.

Please note that individual membership of IACS is free of charge. You can register at the following link: https://cryosphericosciences.org/members/membership/#iacs_stats

At the same link you will find interesting statistical information, with data updated in real time. This data shows a continuous increase in individual enrolment in IACS, which has more than doubled since 2019. Enrolments from European countries predominate and the category that is most represented is that of doctoral students. Both of these figures, which are also of relevance for our country, demonstrate the interest and importance of these topics, which are closely linked to the ongoing climate changes in which the cryosphere plays a significant role. The statistics still show a limited (32%), though not negligible, participation by women.

It should be noted that the IACS does not have a similar reference association in Italy, as is the case for the other IUGG associations.

2. Main activities carried on by (Union name) during 2022 relevant for Italy and for CNR

Since the COVID-19 pandemic crisis and the transformation of the IACS-IAMAS-IAPSO Scientific Assembly, scheduled to take place in South Korea in July 2021, into 'The Virtual Atmosphere-Cryosphere-Ocean seminar series (VACO-21)' (19-23 July 2021), no other significant activities have taken place.

The next time the IACS will meet in person will be at the IUGG 2023 General Assembly in Berlin from 11 to 20 July 2023.

3. Activities carried on by (Italian Delegate name) within the Union during 2022 and impact on the Italian scientific community

Activities focused on:

-Dissemination of information and newsletters from IACS to the Italian glaciological community, the Italian Glaciological Committee, colleagues at the Institute of Polar Sciences of the CNR and PhD students in Polar Sciences afferent to Ca' Foscari University Venice. The dissemination of information was also carried out within a network of PhD students of the ITN DEEPICE project (EU funded). On all these occasions, I renewed the possibility of individual membership in IACS. Attention was also always paid to the deadlines and the possibility of submitting nominations for the Early-Career Scientist Award that IACS promotes every year.

-The IACS secretariat, at my request, made it known that outreach is particularly important in view of the upcoming IUGG General Assembly; the allocation of funds to IACS by the IUGG for the next four years is in fact determined by the number of participants registered as IACS members. In the last three years, the number of IACS members has doubled and recently exceeded 1,000. Of these, 64 indicate their nationality as Italian and 56 claim to reside in Italy (including three new members in the last year). This ranks sixth among the 60 countries represented among IACS members.

- A proposal to nominate a young Italian researcher for the 2023 IACS Early Career Scientist Award was submitted.

- A session proposal for the IUGG Berlin Assembly 2023, focusing on the study of ice cores, was submitted and accepted. Session C06 entitled 'New Frontiers in Paleoclimate Reconstructions and Proxy Interpretations from Ice Cores' was organized in collaboration with French and American colleagues. It was disseminated widely through various mailing lists.

C06 New Frontiers in Paleoclimate Reconstructions and Proxy Interpretations From Ice Cores

Convener(s): Ji-Woong Yang (France)

Co-Convener(s): Mathieu Casado (France) Barbara Stenni (Italy) Christo Buizert (USA)

Description

The last IPCC report highlighted remaining large uncertainties in the future evolution of the cryosphere with direct consequences on global sea level rise. Understanding past climate variability and sensitivity from glacial archives is thus fundamental for placing the current changes in a longer-term context. The scientific ice core community is currently putting an enormous effort towards (1) retrieving the oldest continuous ice core from Antarctica (Project Beyond EPICA) and (2) training a new generation of ice core scientists capable of analysing, interpreting, and modelling the new records that will be obtained (ITN DEEPICE project). In addition, the ice cores retrieved in high-altitude/low-latitude glaciers are offering a wealth of paleoclimate information covering the last centuries and millennia, preserved in what is called the third pole. We invite contributions reporting new results or data/model studies related to ice cores drilled in both polar regions and mid-low latitude glaciers and covering temporal scales spanning from the last decades to glacial-interglacial cycles. Contributions presenting novel techniques for (1) advances in new proxies and increasing temporal resolution, (2) interpreting the paleoclimate records with new statistical techniques, (3) understanding the post-depositional processes potentially affecting the integrity of the records as well as new tools for (4) dating and (5) modelling paleoclimatic signals are welcomed.

4. Evaluation of the participation in terms of benefits and membership cost

The objectives of IACS are to promote cryosphere studies and encourage research on cryosphere sciences through collaborations and co-operations between individuals, institutions and research programmes, both national and international, to provide opportunities for international discussion and publication of research results on cryosphere structures and processes, and to promote public education and awareness on cryosphere issues. There is no doubt the importance that the cryosphere has and will have in the future on climate change as highlighted by the IPCC SROCC special report, both globally and nationally. The involvement and sponsorship of events by IACS in the cryosphere are of fundamental importance to enhance the activities of the Italian scientific community at an international level. I believe that participation in the Union is of fundamental importance. The presence of a CNR Polar Science Institute and a PhD in Polar Science at Ca' Foscari University in Venice are in themselves clear reasons to continue Italian participation in IACS and IUGG. It is also worth mentioning that Italy has two important polar programmes, one for the Antarctic (PNRA), which has been running for more than thirty years, and one for the Arctic (PRA), which has been set up more recently, and which involve numerous researchers throughout Italy, and that participation in IACS is relevant to both. In this regard, it is recalled how SCAR (Scientific Committee on Antarctic Research) and IACS recently launched the announcement of the upcoming 5th International Polar Year (IPY) to be held in 2032-33 and a joint congress on polar activities for 2030. For both initiatives, a strong involvement of the national community is desired, which participation in IACS groups can certainly facilitate.

5. Evaluation of Italians' attendance and how to improve interest and involvement

The possibility of registering individually and free of charge with IACS has certainly led to a greater involvement of the Italian scientific community, and in particular of young researchers, in IACS-related activities, and the statistics, reported above (Italy is in sixth place among the 60 countries represented within IACS), confirm the importance of opening up individual membership to scientific associations.

The creation of new working groups within one of the currently existing divisions, or the participation in the existing ones, which at the moment do not see the presence of Italians in the positions of heads of division, could certainly increase the involvement of the scientific community.

As has already been mentioned several times and as highlighted in the introduction, although there are many national realities that deal in various capacities and on various fronts with the association's topics of interest, there is as yet no reference community that identifies with it as there is in other sectors. An action to strengthen the identity and improve the coordination of the national community, promoted through seminars, workshops, and exchanges would undoubtedly benefit and improve the association's positioning. Actions are underway to organize, together with other polar activity players, a first joint congress to strengthen the community's interest and involvement also in view of the joint international events mentioned in point 4.

6. Italian experts with important roles within the Union or within related Commissions and Programs (if known)

There are no Italian experts with apical roles within IACS but there are experts in other related programmes such as:

Carlo Barbante national delegate of the IUGG International Arctic Science Committee (IASC) and representative, appointed by the Minister of University and Research, to the European Polar Board; Giovanni Macelloni is national delegate (alternate) of the IACS/IUGG, Italian focal point of the Global Cryosphere Watch - of the WMO (GCW-WMO) and member of the Cryonet Team of the same organisation; Silvano Onofri is president of the National Scientific Commission for Antarctica; Carlo Baroni is national correspondent of the WGMS (World Glacier Monitoring Service; <https://wgms.ch/contact-ncs/>), national representative of the Standing Committee on Antarctic Geographic Information (SCAGI) at SCAR (<https://www.scar.org/resources/scagi/members/>), member of the CNR-IUGS (International Union of Geological Sciences) commission.

In addition, Giovanni Macelloni (CNR-IFAC) is the national delegate to SCAR (Scientific Committee on Antarctic Research). SCAR is part of the International Science Council (ISC) and brings together representatives from 45 states. SCAR is responsible for initiating, developing and coordinating international scientific research in the Antarctic region and the Antarctic region's role in the Earth system. In addition to its scientific role, SCAR also provides objective and independent scientific advice to the Antarctic Treaty Consultative Meetings and other organizations such as the UNFCCC and IPCC. SCAR's scientific activity is conducted through its Science Groups where all scientific disciplines active in Antarctic research are represented. In addition to the regular scientific meetings, SCAR meets every two years, when its national delegates meet, to formulate its policy and strategy. Giorgio Budillon (Full Professor - University of Naples Parthenope) has been appointed as an alternate to the same group. For more information on SCAR <https://www.scar.org>.

7. If Union with CNR Commission, short summary about the 2022 CNR Commission activities

The undersigned and/or the deputy, Giovanni Macelloni, participated by e-mail or videoconference in the various activities and requests by the CNR-IUGG Commission.

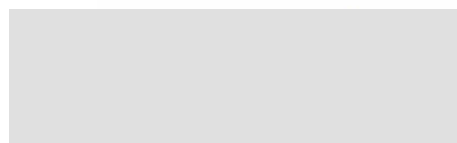
8. Notes (if any)

None

9. Conclusions

There is no doubt about the importance that the cryosphere has and will have in the future on climate change both on a global and national level. The possibility for Italian researchers to be able to participate in events organized by IACS in the field of the cryosphere is of fundamental importance for enhancing the activities of the Italian scientific community on an international level. Thanks to the dissemination activities carried out, there has been good interest on the part of the Italian scientific community in the activities of IACS, which has seen an increase in individual registrations, placing us among the countries most represented. An action of for strengthening the Italian role and better coordination of the national glaciological community would undoubtedly lead to further benefits. Possible actions in this direction have already been identified.

Signature



Venezia, 15/05/2023