

IAPSO-IUGG

Activities' Report - Year 2019

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1. Introduction

IAPSO, the International Association for the Physical Sciences of the Oceans, is one of the 8 Associations of IUGG, the International Union of Geodesy and Geophysics, representing the international community of physical ocean sciences. The IAPSO activity is carried out by organizing biennial conferences, that every four years coincides with the IUGG General Assemblies, and through commissions, committees and workshops on original and up-to-date research themes. IAPSO also participates to the activities of SCOR (Scientific Committee on Oceanic Research), with which it has organized a number of joint working groups. IAPSO provides also basic services to the research community, such as the Permanent Service for Mean Sea Level and the IAPSO Standard Seawater Service, the latter being the reference for calibrating seawater salinity measurements. IAPSO has a website (<http://iapso.iugg.org/>) and a Facebook page (<https://www.facebook.com/iapso.iugg.org>).

The activities mentioned above have important implications also at the national scale and the participation of the Italian community to the periodic assemblies, in a higher number when they are taking place in European States, is both an occasion to meet the international reference community and a place to enhance visibility of research activities carried out in national academies or research institutions.

2. Main activities carried on by IAPSO during 2019 relevant for Italy and for CNR

The most relevant IAPSO activity in 2019 has been the participation to the IUGG General Assembly, that took place in Montreal in July 2019 (<http://iugg2019montreal.com>). About 4000 scientists contributed to the conference, of which about 400 gave presentation during the IAPSO symposia. The participation of the Italian IAPSO community was limited to about 10 people, considering that the conference took place overseas. Some Italian IAPSO scientists contributed to the organization of these symposia, these were:

Physics and Biogeochemistry of Semi-Enclosed and Shelf Seas, K. Schroeder (Venezia), co-convener

Coastal Ocean Acidification, C. Cantoni (Trieste), co-convener

Technological Advances for Ocean Sciences, R. Nair (Trieste), co-convener

Role of ocean processes in the transport and fate of floating plastic litter in the ocean and shelf-seas: theory, modelling and observations, S. Aliani (La Spezia), co-convener

Monitoring Sea Level Changes by Satellite and In-Situ Measurements, F. Raicich (Trieste), co-convener

Satellite Remote Sensing: Vital Information on the Health of our Planet, S. Vignudelli (Pisa), co-convener

Gravity-driven flows in the Earth system, F. Falcini (Roma), co-convener

Another Italian activity was the participation of IAPSO Italy to the Workshop organized by the CNR-IUGG Commission in November 2019 in Rome, with the subject "State of the art and perspectives of the predictability of natural events". The workshop had the objective to have experts of different fields where predictions of natural events and hazards are done meet and discuss, to understand the different approaches, to speak about terminology, and to evaluate if and to what extent the efforts done in each sector are comparable with other sectors. The confrontation has been particularly useful in a "multi-hazard/multi-risk" framework, which is often mentioned and is not very well established from a rigorous scientific point of view, or is not that useful from the practical point of view. Each Association has contributed to the workshop with a couple of speakers. In the case of IAPSO, the speakers were Georg Umgiesser (CNR-ISMAR, "Predictability and its uncertainty of storm surges") and Giovanni Coppini (CMCC, "Short term oceanographic forecast").

3. Activities carried on by Italian Delegate within the Union during 2019 and impact on the Italian scientific community

With the aim to qualitatively and quantitatively enhance the Italian participation it is necessary to make a better access to information possible. To this end I have build up a mailing list of Italian scientist who are associated to IAPSO, to which it is always possible to be added (instructions are published here: <https://www.cnr.it/it/organismo-scientifico-internazionale/38/iapso-iugg-international-association-of-physical-sciences-of-the-oceans>), which will be used by the delegate and the alternate to easily spread information and communications that are relevant for IAPSO, as well as collect contributions for the periodic reports on the Italian scientific activities in the framework of IAPSO. The next objective will be to create a higher awareness within the national scientific community concerning the importance of participating to the activities promoted by international organizations such as IAPSO. Given that the IAPSO community is potentially large and distributed among many institutions and universities (CNR, INGV, OGS, CONISMA, CONISMA, just to mention a few), the next steps could be the dissemination of the IAPSO/IUGG Programms and Initiatives. The mailing list will be used also for this scope.

In the context of the G.A., S. Sparnocchia has participated as Secretariat General of IAPSO to the General Business Meeting, while I have participated to the meeting instead of the Italian delegate M. Sclavo, who resigned this role in June 2019. During the Business Meeting the new Executive Committee has been elected, and will be in charge until 2023. Trevor McDougall, Professor at the University of New South Wales in Sydney (Australia) has been elected as the new IAPSO President. He has been vice-president from 2015 to 2019.

During the G.A the prestigious Albert I Medal 2019 has been assigned to Dr. Corinne Le Quéré, FRS, Professor at University East Anglia (UK) e Director of the Tyndall Centre for Climate Change Research (2011-2018), for “her fundamental contributions to our understanding of ocean biogeochemistry and global carbon cycling, and her work to quantify the ocean's role in the uptake of global carbon emissions”. Furthermore IUGG has awarded me with the Early Career Scientist Award.

The event “State of the art and perspectives of the predictability of natural events” (Rome, November 2019) has been a great success, and should be continued with two successive meetings, one in 2020 and one in 2021, of which the former will deal with the risks that have been neglected in the 2019 meeting, and the latter will be focused on the interaction with stakeholders and the communication of the risk.

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

As the other IUGG Associations, IAPSO is a scientific reference and is fundamental for the internationalization of the Italian community, favouring the openness towards the global community. Through IAPSO the Italian scientific community has the opportunity to participate to scientific initiatives (conferences, scold, working groups, strategic plans drafting), even from the organisational point of view. This enhances visibility of the national community and its authoritativeness in the framework of the Association. The membership costs to IUGG do also have advantages from an economic point of view, given that the Italian participants care eligible to receive support for their participation to the scientific activity through travel grants and funding for the organization of workshops in Italy, thanks to IUGG support programs to scientific meetings.

For instance, the workshop THEMES 2017 (“Physics and biogeochemistry of marine environments: multiscale analysis of past and present variability”, Venezia, November 2017), to which many Italian researchers participated, has been supported by IAPSO-IUGG. Other events that have been organized in Italy thanks to IAPSO support have been: Arctic Subarctic Ocean Flux Study (ASOF), Lerici, March 2016; Past Antarctic Ice Sheet Dynamics (PAIS) Conference, Trieste, September, 2017.

Other similar event can be supported in future. To conclude in my opinion the benefits/cost ratio of the membership is extremely favourable.

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

The organization of a national scientific event related to IAPSO or more in general to IUGG and its associations, would help to promote the Association's activities in Italy and would provide useful contents to

the preparation of the biennial report of the Italian activities. In addition, it would create a higher awareness within the national scientific community about the role that Italy could have at the international level, based on the notable scientific expertise and the availability of instruments and observational networks.

We have received a potential candidacy of the city of Florence to host the next IAPSO conference (which could be not earlier than 2025, since in 2021 there will be a Joint Assembly in South Korea, while in 2023 IAPSO will meet during the IUGG General Assembly, for which the successful candidate city has been Berlin; for 2025 IAPSO does not yet have any plans, and the conference needs to be done jointly to other associations).

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

The Italian community is represented in the committees and the commissions of the Association, and has had representative roles within international organizations on behalf of the Association and the Union. In particular, between 1995 and today:

- Paola Malanotte Rizzoli (USA/Italy) was part of the IAPSO Bureau from 1995 to 2007 as President (1999-2003), Past President (2003-2007) and Deputy Secretary General (1995- 1999).
- Mario Astraldi has been member of the Executive Committee from 1995 to 2003.
- Stefania Sparnocchia has been member of the Executive Committee from 2007 to 2015 and since 2015 she is Secretary General. Furthermore, she has been Liaison Officer of IUGG/IAPSO for the Intergovernmental Oceanographic Commission of UNESCO from 2011 to 2019 and has been member of the Site Comparison Committee that evaluated the proposals for the IUGG G.A. in 2023, and selected Berlin.
- Stefano Tinti is member of the Joint Tsunami Commission (IAPSO/ IASPEI/IAVCEI)
- Christian Ferrarin is member of the Commission on Mean Sea Level and Tides (the commission's members are all those that participate to the commission's meetings, C. Ferrarin has participated to the 2019 meeting)

The organization of a national scientific event connected to IAPSO, or more in general to IUGG and its Association, with a biennial recurrence, could be useful to promote the Association's activities in Italy and would give useful inputs for the preparation of the biennial report of the Italian contributions to IAPSO.

7. Conclusions

As already pointed out in previous occasions, it would be useful to establishing a national award for Italian early career scientists, active on IAPSO themes, that would favour their participation to the General Assemblies of the Association. This participation should also be encouraged by sustaining young Italian researchers with fellowships and awards, enhancing their international mobility.



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