



INSTITUTE OF POLAR SCIENCES

Overview

The Institute newsletter: one year after

[Angelo P. Viola](#)

A year has passed since the first issue of our Newsletter was published. It was created to share information on the life of ISP and supplement what's available on the website. It also aims to update the scientific community on changes in progress, so it represents an important element of communication for the Institute.

The NL with its light but not superficial editorial structure offers the opportunity to talk about science in a clear and simple way even to non-specialists. The contribution of our researchers was and is essential to illustrate the research carried out by the Institute, to tell of experiences in the field and explain processes and phenomena that directly affect the state of health of the polar environment. The editorial columns have been organized to describe the life of the institute, to comment on natural events and of dedicated research, and to bring to your attention phenomena that are sometimes missed by the mass media. It also talks about field work from Ny-Ålesund that covers various scientific topics. Instead, our

postcards cover other areas of the globe where our researchers work and are dedicated to these activities. Furthermore, events and initiatives related to national and international polar research are announced in the newsletter. This editorial of the newsletter has met with great interest even outside the national scientific community.

The Communications working group of the Institute of Polar Sciences are pleased and proud of the results we have achieved and will continue in our efforts to enrich the newsletter with new editorial ideas and new columns. The WG thanks all the readers and subscribers and we hope that their number of will grow in the near future.

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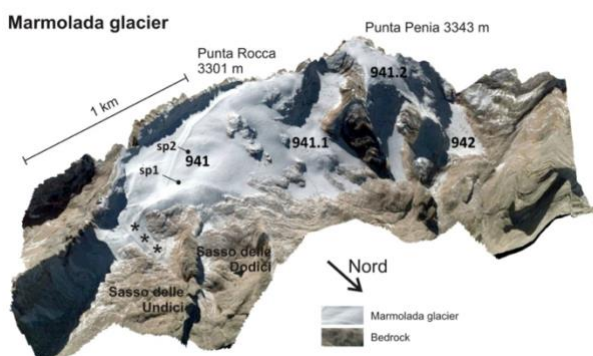
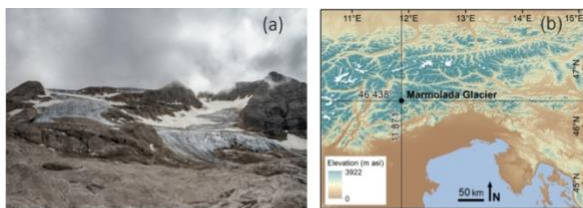
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TOP STORIES

The ice avalanche of July 3rd 2022 in Marmolada

[Renato R. Colucci](#)

On July 3rd, 2022 a portion of the Marmolada glacier collapsed in what glaciologists call an ice avalanche. Several weeks of excessively high temperatures with values more typical of North Africa than the Alps, led to the formation of an enormous availability of glacial meltwater. The water saturated a transverse fracture of the glacier (a crevasse) that was generated by the deformation and dynamics of the glacier itself under the action of its own mass, modifying the internal hydraulic pressure. This circumstance further widened the fracture and then lubricated the basal part of that portion of the glacier causing it to collapse down towards the valley.

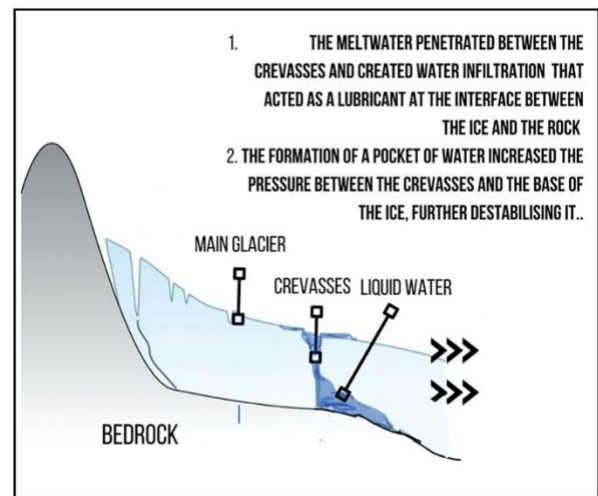


(The Marmolada glacier in an image modified by the work Recent evolution of Marmolada glacier (Dolomites, Italy) by means of ground and airborne GPR surveys - Remote Sensing of the Environment magazine, 2019)

Although it is a consequence of a particular meteorological situation, global warming is at the heart of this event as it has already changed

the climate of the planet and the Alps. Extreme events with a warm footprint for this reason becoming increasingly frequent and intense. Moreover, the Alps are considered a climatic hot spot, that is a place on Earth where the effects of global warming are more pronounced.

The Media and the public often ask themselves if it is possible to save the Marmolada glacier as well all the others. Obviously, discarding crazy practices such as roofing the glaciers with geotextile sheets, a turnaround would be possible only with a sudden cooling of the climate to at least the values of the 1970-1980s. Nevertheless, this is a very unlikely hypothesis since it is now irrefutably established that the increase in Earth's temperatures is closely related to the increase in greenhouse gases in the atmosphere due to the fossil fuels used to produce the energy we need.



(Sketch with the causes of the triggering dynamics of the ice avalanche of 3 July 2022 made by ISP a few days after the event)

The natural cycles and their causes, invoked by a bunch of obtuse climate deniers, tell instead us that from 1850 to present day the Earth should have cooled on average by about 0.1 °C, and therefore from a glaciological point of view we would have glaciers in the same situation they were about 170 years ago, or even slightly "healthier" in some cases.

HERE DIRIGIBILE ITALIA

Mauro Mazzola

The summer of 2022 has been very busy at Dirigibile Italia, and it is not over yet.

Since June activities related to numerous projects mainly involving biology, geology, and hydrology took place. Four of these projects and their related field activities were funded by the Program for Research in the Arctic (PRA), sponsored by the MUR. In three other cases, the activities were funded through the Arctic Field Grant (AFG) program of the Norwegian National Research Council (RCN). In this case the activities were carried out by young researchers, to whom the AFG program gives priority.



Credit: Giulia Vitale

We also hosted 2 projects by researchers from other countries that do not have a base in Svalbard (specifically Austria and Finland)

through the European access program [INTERACT](#).



Credit: Mathia Sabino

As we have done for the past 2 years, we have also hosted 2 PhD students from the course in Polar Sciences at Ca' Foscari. There were also routine maintenance activities of our research

infrastructure, such as on the three moorings installed in the fjord, the Climate Change Tower with the periodic calibration activities of the thermometers and instruments that measure greenhouse gas fluxes, and the aerosol instruments installed at the Gruebadet Atmospheric Laboratory.

An important change this summer is that the Institute of Polar Sciences has hired two researchers (with research grants) to manage the scientific and logistical aspects of the site, the person we call the acting station leader (ASL). They will take turns at the base every three months, allowing us to provide more continuity in the management of the base.

Some activities are still in progress or will take place between the end of September and the end of October. After this date, the base will go almost completely into "monitoring" mode, with minimal staffing following only routine scientific activity



Ombretta Dell'Acqua, acting station leader

Before the end of the year, we expect to publish a new call for activities for 2023 to collect requests and projects from the Italian scientific community interested in working at Dirigibile Italia.

RESEARCH HIGHLIGHTS

EXPO-HALO: a project in cooperation with Vietnam

[*Mikhail Iakimov e Violetta La Cono*](#)

Within the framework of the bilateral cooperation between the Vietnam Academy of Science and Technology (VAST) and National Research Council of Italy (CNR), the project "EXPLO-HALO: Exploring and exploiting the diversity of extremely halophilic prokaryotic communities in food-grade salts and high salt-fermented food stocks" is currently running.

In EXPLO-HALO, we will generate knowledge based not only on the phylogenetic diversity of extreme halophilic microbial communities (diversity of 16S rRNA genes), but also, on (meta)analysis of the genome, and the search and characterization of specific enzymes that determine the physicochemical and organoleptic characteristics of both salts, and local traditional fermented sauces.

Dr. Mikhail Iakimov and Dr. Violetta La Cono (CNR-ISP of Messina) visited Vietnam last June (for two weeks) to collect natural samples: hypersaline brines, sediments, food-grade salts and various high salt-fermented pastes and sauces; either collected at marine solar salterns of Nha Trang, or legally purchased from various food-stock shops, markets and

farms in Ho Chi Min, Hoi An and Hanoi. VAST partner Prof. Ninh Khac Ban visited our

Institute from 2nd to 15th September for a joint visit to marine salterns and sampling.



Project "EXPLO-HALO: a group picture!

POSTCARDS FROM THE FIELD ...

POSTCARD

Eva Bartoletti, Sara Liburdi and Marco Salvatore are students of Ecobiology (Sapienza University, Rome), who are mentored by Rosamaria Salvatori and Emiliana Valentini for their master thesis at ISP-Rome. Their activities concern models for estimating the active layer thickness of the Arctic permafrost via remote sensing and for identifying the potential biogeographical discontinuities in carbon storage. In this context, they were selected and funded by SIOS for participating to the [Artificial Intelligence \(AI\)](#) course in Longyearbyen (Svalbard).



Eva Bartoletti
Marco Salvatore
Sara Liburdi



Credits: Eva Bartoletti, Sara Liburdi e Marco Salvatore



Greetings from the Lapland!



In the context of the INTERACT-CIRCE[™], together with two colleagues from the Zoological Station Anton Dohrn and the University of Pisa, I was in Utsjoki in the Lapland, hosted by the KEVO Sub-Arctic Research Institute. The project aims at relating the microbial communities with the level of environmental contamination in aquatic systems. We carried out sampling activities along the River TENO, at the border between Finland and Norway, and the Lake KEVO.

Angelina Lo Giudice



Credits: Luigi Troiano e Pierre-Marie Poulain

L. Langone, P. Giordano, F. DeRovere, with NAJD-CMRE e OGS (P. Mansutti).



Dear friends, greetings from 80°N.

We came up here to monitor the characteristics of Atlantic water masses and study the physical and biogeochemical mixing processes of Atlantic and Arctic waters, organic and inorganic particulate fluxes, the planktonic biodiversity along the entire western escarpment of the Walbard Islands.

During the Arctic expedition NREP-22 (6-28 June 2022), we also carried out the annual maintenance of our 81 mooring. This did not go unnoticed by a Minke Whale that stayed to look id for the duration of the mooring recovery operations





UPCOMING EVENTS

- **INTERACT TA/RA** Call for access taking place in s/s 2022 and a/w 2022-23 opens on 12th September, 2022!
<https://eu-interact.org/accessing-the-arctic/tacall/>
- **European Research Night**, 30 September 2022- <https://www.nottedeiricercatori.it/>
- **3rd IPICS Open Science Conference** in Crans-Montana, 2 – 7 October 2022 Crans-Montana (CH), Switzerland.
<https://indico.psi.ch/event/6697/>
- **KUM Festival**, Ancona – from 14th to 16th October, La Mole, Ancona - <https://www.kumfestival.it/>
- **The Future of Research Infrastructure in the Arctic** - 27 October 2022
<https://www.eventbrite.co.uk/e/the-future-of-research-infrastructure-in-the-arctic-tickets-373156560317>
- **Festival della Scienza**, Genova – from 20th October to 1th November
<https://www.festivalscienza.it/site/home.html>
- **Festival della Scienza**, Roma – from 21 to 27 November, Auditorium Parco della Musica -
<https://www.auditorium.com/>
- **Arctic Frontiers 2023: Moving North**, 30 January-2 February 2023
<https://www.arcticfrontiers.com/arctic-frontiers-2023-moving-north/>

STAY IN TOUCH:



Consiglio Nazionale delle Ricerche
Istituto di Scienze Polari

<https://www.isp.cnr.it/index.php/en/> - E-mail: isp-gdl-comunicazione@isp.cnr.it



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