

Updates on Italian Arctic Activities

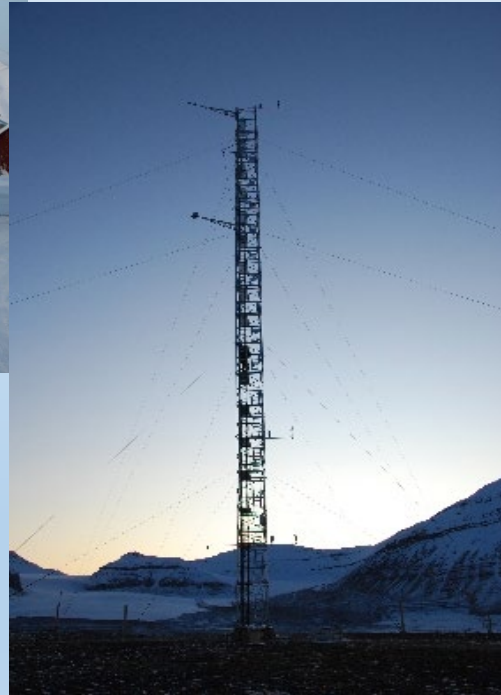
Mauro Mazzola

**National Research Council of Italy
Institute of Polar Sciences
(CNR-ISP)**



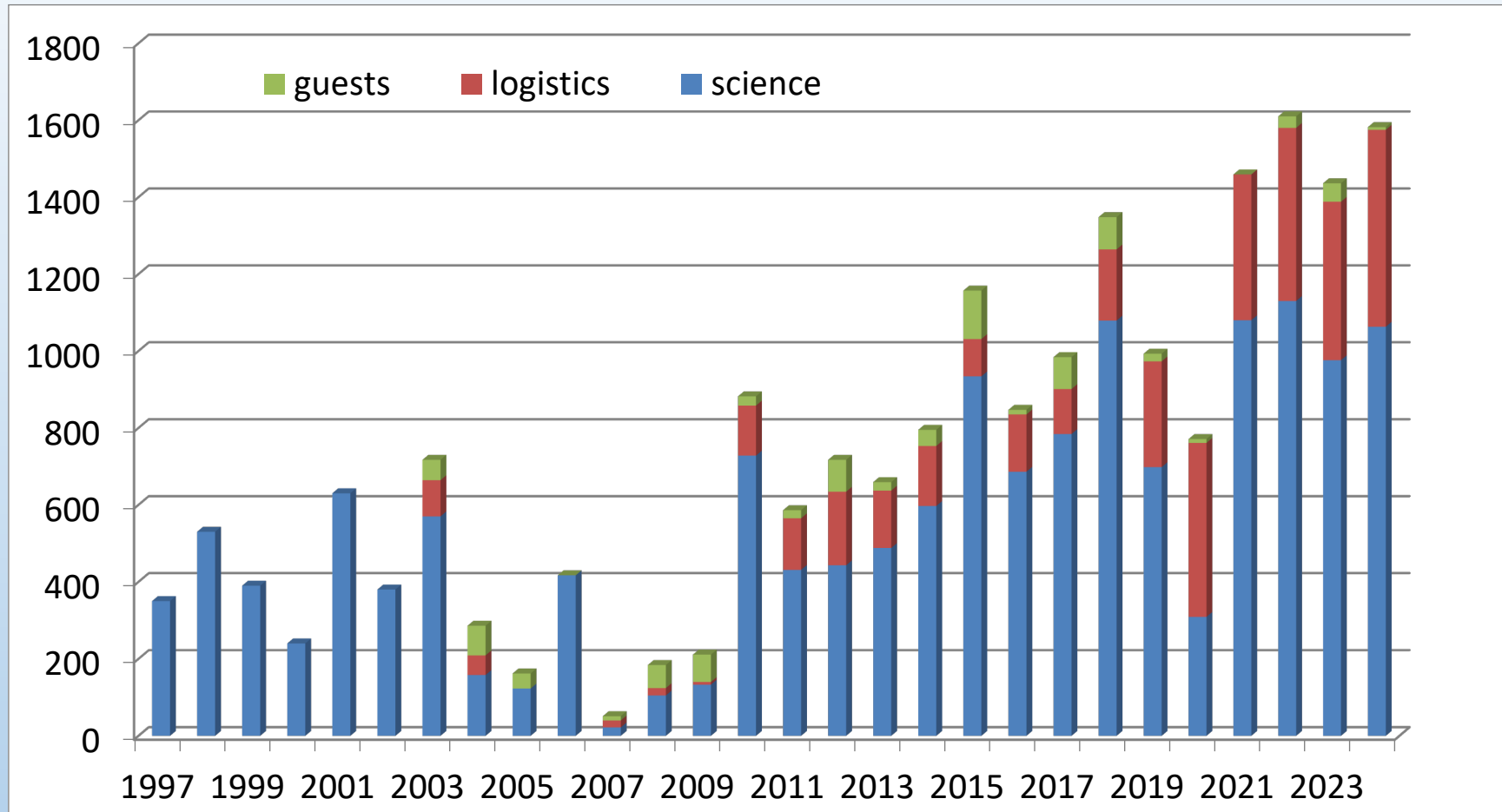
FARO annual meeting, ASSW, March 21, 2024

Arctic Station “Dirigibile Italia”, Ny-Ålesund Research Station (Svalbard)



- Opened in **1997**
- Managed by **CNR-ISP**, but hosts researchers from other institutions and universities
- Surface 330 m^2 with sleeping rooms, offices and laboratories
- Can host up to 7 researchers
- Since 2018 runs **all year round**
- Access through a national call and a peer-review process.
- Participates to **INTERACT/SIOS/POLARIN/EMBRC** access programs

Man-days at Dirigibile Italia



33 projects submitted for 2024, including access projects. For 2024 we expect a similar number of attendances as in 2023.

Overview of planned vessels/icebreaker capacity, with updates on status and date of availability of the vessels/icebreakers

RV LAURA BASSI (OGS)



Length overall: 80 m
Beam, overall: 17.00 m
Draft: 6.85 m
Year Built: 1995
Gross tonnage: 4028 T
Engine Power: 2 x 2650 kW
Tunnel thrusters: 4 x 608 kW
Azimuth thruster: 1 x 811 kW
DP 2
Maximum speed: 17 knots
Cruising Speed: 12 knots
Survey Speed: 8 knots
Endurance: 60 days
Scientific Personnel: 50
Crew: 22 people
Cabin: 37
Special Purpose Ship
Icebreaker ICE 05
3 Cargo hold: 3.000 m³
Heli deck

Length overall: 82.90 m
Beam overall: 13.00 m
Draft (design): 4.80 m
Gross tonnage: 981
Gross tonnage: 2024 T
Engine Power: 2 x 2941 kW
Bow Thruster: 1 x 400 kW
DP zero
Maximum speed: 17 knots
Cruising Speed: 11 knots
Survey Speed: 8 knots
Endurance: 36 days
Scientific Personnel: 24 people
Crew: 18 people
Cabin: 23
Special Purpose Ship
Ice class 1B, not yet PC certified
Cargo deck

NO PLANS FOR THE ARCTIC IN 2024

RV GAIA BLU (CNR)



Information on ICARP activities/contributions

12 Italian experts in 5 topic areas

Topic Area 1: The Role of the Arctic in the Global System

Tommaso Tesi (paleoclimate/permafrost, CNR), Giovanni Muscari (mesosphere/stratosphere, INGV), Stefania Gilardoni (aerosol/BC, CNR)

Topic Area 2: Observing, Reconstructing, and Predicting Future Climate Dynamics and Ecosystem Responses

Maurizio Azzaro and Laura Ghigliotti (marine biology, CNR), Manuel Bensi (oceanography OGS), Vito Vitale (atmosphere, CNR), Giorgio Di Sarra (atmosphere, ENEA)

Topic Area 3: Understanding the Vulnerability and Resilience of Arctic Environments and Societies and Supporting Sustainable Development

Nicoletta Ademollo (ecosystems, vulnerability and resilience, CNR), Massimo Santarelli (green energies, hydrogen, POLITO)

Topic Area 4: Scientific cooperation and diplomacy

Marco Volpe (Asian countries and Arctic, Italian PhD student in Finland)

Topic Area 6: Preparing present and future generations through Education, Outreach, Communication, Capacity Building, and Networking

Maria Silvia Giamberini (hydrology/critical zones, CNR)

Information on ICARP activities/contributions

CNR had a call for ACTIVITIES TO SUPPORT PHASE 2 OF THE FOURTH INTERNATIONAL CONFERENCE ON ARCTIC RESEARCH PLANNING – ICARP IV

Lucilla ALFONSI (INGV, lucilla.alfonsi@ingv.it): Cross-cutting activities for **geosciences, atmospheric physics and space sciences**

Angelina LO GIUDICE, Maurizio AZZARO (CNR-ISP, angelina.logiudice@cnr.it, maurizio.azzaro@cnr.it): **Microplastic emergency** and the associated plastisphere in freshwater habitats of the Arctic

Andrea SPOLAOR (CNR-ISP, andrea.spolaor@cnr.it): The effects of **winter warm spells** on the ecosystem and the socio-economic organization of Arctic communities

Update on modernizing infrastructures in terms of green transitions

From **2023** the station has an **electric car** for moving people and goods in and around Ny-Ålesund:

- higher efficiency respect to a conventional engine
- less pollution near the sampling sites





Our data are available at the
Italian Arctic Data Center
<https://iadc.cnr.it>

Metadata via Geonetwork

Data via ERDDAP

The screenshot shows the IADC website interface. At the top, there is a search bar with the text "Search 14 data sets, services and maps...". Below the search bar, there are several topic-based filters: "Clouds, meteorology, airways", "Ecosystems", "Oceanographic information", and "Dataset". The "Dataset" filter is highlighted with a green icon. Below these filters, there are four featured search results with thumbnail images and titles: "Inter-comparison of UV radiometers at Svalbard", "Climate Change Tower Meteorological Data", "The extreme Arctic ozone depletion in 2000 as was", and "Ensembleb terrestrial T SCA in the Bayveia area (S)".

The screenshot shows the ERDDAP website interface. At the top, there is a header "Italian Arctic Data Center ERDDAP" and a sub-header "Easier access to scientific data". Below the header, there is a section "ERDDAP > List of All Datasets" and a sub-section "20 matching datasets, listed in alphabetical order". The main content is a table with columns: Grid Data, Sub-set, Table, DAP, A, M, Data, W, Source, Access, Title, Summary, FGDC, ISO, Back-ground, RRS, E-mail, Institution, and Dataset ID. The table lists 20 datasets, including "The List of All Active Datasets in this ERDDAP", "Climate Change Tower Meteorological Data (D1.5 Quality Assured)", "Climate Change Tower Meteorological Data (D2)", "Climate Change Tower Radiation Data", "Climate Change Tower Radiation Data (D1.5 Quality Assured)", "Climate Change Tower Radiation Data (D2)", "CTD data set from mooring M02 @ 35m and 65m (Kongsfjorden)", "CTD data set from mooring S1 @ 1000 m", "Equivalent black carbon from aerosol absorption coefficient", "EXAODEP-2020 ozone column at Barentsburg Svalbard station", "EXAODEP-2020 ozone column at Ny-Alesund Svalbard station", "EXAODEP-2020 surface UV irradiance at Hornsund Svalbard station", "EXAODEP-2020 surface UV irradiance at Longyearbyen Svalbard station", "EXAODEP-2020 surface UV irradiance at Ny-Alesund Svalbard station", "Fractional snow-covered area in the Ny-Alesund area in 2020", "Inter-comparison of UV radiometers at Svalbard", "Snow height at the Gruevabekel Snow Research Site in 2020 (NY-Alesund, Svalbard, Norway)", "Snow height in 2020 at the Admunsen-Noble Climate Change Tower, Svalbard, Norway", "Snow temperature in 2020 at the Admunsen-Noble Climate Change Tower, Svalbard, Norway", and "Snow temperature in 2020 at the Gruevabekel Snow Research Site (NY-Alesund, Svalbard, Norway)".