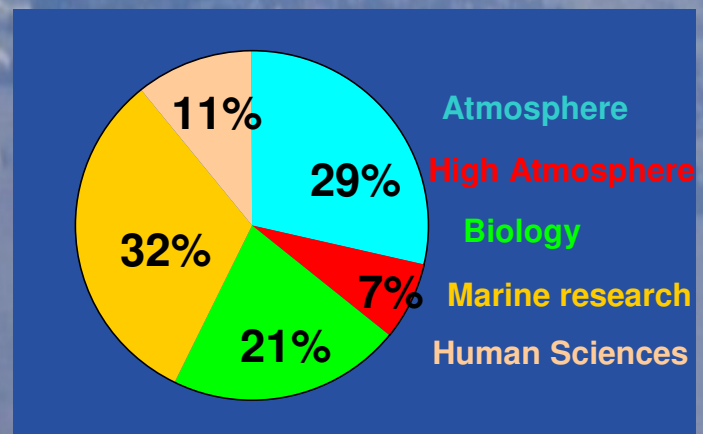


RESEARCH ACTIVITIES AT THE DIRIGIBILE ITALIA STATION FROM 1997 TO NOWADAYS



Ny-Ålesund is an ideal place for multidisciplinary studies aimed at improving the knowledge of the complex processes and interactions linking together the different components of the Arctic climatic system. In 1997 the National Research Council of Italy (CNR) opened a scientific station in Ny-Ålesund. The station was named "Dirigibile Italia" in honor of all the victims of the Nobile's airship expedition of 1928. Between 1997 and 2004 the scientific activities had been carried out in the framework of the CNR Arctic Strategic Project and afterwards the CNR Department of Earth and Environment has provided significant support to maintain the activities of the station and develop international collaborations. Activities supported by the Arctic Strategic Project, formerly, and then by DTA have involved around 120 scientists from the CNR, from other scientific institutions and from the universities. In the period between 1997 and 2004 station was used for an average of 400 man-days per year, with peaks of activities reaching around 900 man-days.

anno	Finanziamento lire	Finanziamento euro
1997	212.000.000	109.489
1998	378.000.000	195.221
1999	378.000.000	195.221
2000	378.000.000	195.221
2001	450.000.000	232.405
2002	450.000.000	232.405
2003	0	0
2004	484.067.000	250.000
2005	0	0
2006	0	0
2007	193.627.000	100.000
2008	290.440.500	150.000
2009	677.694.500	350.000



The CNR Station in Ny-Ålesund, have provided through the years the opportunity to enhance Italian research in the context of international cooperation. International collaborations are established mainly with German, Norwegian, US and Canadian institutions. The Italian involvement in European coordination networks is strong and high-quality based.

Since its opening, the Station Dirigibile Italia has allowed numerous research teams to be successfully involved in European projects (ARTIST, NICE, ENVINET, ARCFAC, MIRACLE) and in national projects, like the PNRA and PRIN. Among such projects, we can mention ENVINET, an international network of polar and alpine scientific observatories, coordinated with the support of the European Commission, which involved the Dirigibile Italia station, and the ARCFAC Project aimed at allowing free access in the Ny-Ålesund research facilities to new scientific teams and projects, and countries not having scientific stations in the area.



The research activity carried out at the Dirigibile Italia Station involved the following fields:

- Atmosphere and climate: Ozone, UV radiation, aerosol chemistry, nitrogen chemistry, mercury, CFC, radiation balance, effects of clouds and aerosols on radiation balance, PBL processes, low troposphere processes, radionuclides, heavy metals.
- High Atmosphere (National Institute of Geophysics and Volcanology, CNR and National Institute of Astrophysics): Ionosphere and magnetosphere processes, auroral observations (Miracle Net), cosmic radiations, ionospheric scintillations.
- Biology and Biomedicine: Molecular, physiological and biochemical bases of marine organisms adaptations; cyanobacterial response to climate change, biodiversity
- Marine and environmental sciences: Kongsfjord hydrology, marine corrosion of metals, marine robotics, paleolimnology, permafrost, snow spectral signature (350 - 2500 nm).
- Human sciences: History of Italian explorations, ecotourism, Arctic peoples (in cooperation with the "Silvio Zavatti" Museum of Fermo)



The opportunity to use a CNR scientific station in the Svalbard Islands, at almost 80° N of latitude, allows to develop experimental research activities which may significantly contribute to the understanding of the role of the Arctic and its evolution, in regard to all the complex phenomena falling under the definition of Global Change. Over such research topic, which is becoming more and more important, are addressed the efforts of the DTA, through the promotion of important integrated projects like the Climate Change Tower (CCT-IP) and the E-mooring project, as well as other projects aimed at investigating how vulnerable terrestrial and marine ecosystems are, and in which way they may adapt to the profound changes occurring nowadays. The construction of important infrastructures for the study and monitoring of the Arctic climatic system has allowed the CNR to bring Italy inside ESFRI SIOS project and made it an integral part of a programme which aims at transforming Svalbard into an instrumental and multidisciplinary monitoring platform.