



# IV ROSS SEA CONFERENCE 2023

Università degli Studi di Napoli "Parthenope"

Via Amm. F. Acton, 38 - 80133 Napoli, ITALY

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**Topic:** Ocean-ice-atmosphere interactions

## Angelo Lupi

**ABSTRACT Subject :**

Preliminary atmospheric observation collected during the Laura Bassi Antarctic Cruise in the framework of PNRA CAIAC Project

**Abstract** 01/03/2023 13:56:44

The CAIAC (ocean Atmosphere Interactions in the Antarctic regions and Convergence latitude) project aims to investigate the aerosol forcing and its role in Climate Change questions answering to specific experimental and modelling tool needs, exploiting the Laura Bassi Cruises during the PNRA campaign. The CAIAC project will exploit innovative tools to provide first results of georeferenced climatic direct effect of different aerosol sources and types in all sky conditions along the Ross Sea region and during the transect between New Zealand and the Antarctic Coast. A specific atmospheric observatory was installed on different part of the ship, and during the first campaign (January-February 2023) different data are collected: online measurements of downwelling (both shortwave [global and diffuse] and longwave) radiative fluxes, plus spectral signature of the sea/ice surface. Besides these radiometric measurements, an absorption photometer was used to evaluate the aerosol Black Carbon concentration in the pristine marine environment of the Ross Sea Area. Moreover, an array of thermo-hygrometer sensors based on optical fiber technology has been installed to investigate the vertical gradient of T e RH meteor variables during Laura Bassi Cruises. Optic fiber technology solutions are just starting in this application field offering advantages such as lightweight, high speed, high sensitivity and the absence of electronic components usually damaged from sea water and salt crystals. In addition, a series of offline aerosols collected filter were also installed to characterize the primary and secondary aerosols, and their climate-relevant properties.

