



# IV ROSS SEA CONFERENCE 2023

*Università degli Studi di Napoli "Parthenope"*

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PHYSICAL OCEANOGRAPHY

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**ABSTRACT Subject :**

An update on the outflow of dense water from the western Ross Sea

**Abstract** 01/02/2023 07:42:40

Dense water from the western Ross Sea exits the Drygalski Trough and flows out of the region along the slope at Cape Adare to form ~25% of the global Antarctic Bottom Water. Ten years of measurements of near-bottom water properties have been collected from moorings deployed at Cape Adare between 2007-2011 and 2018-2023. Here we present the most recent observations in the time series and review key findings to date. The density of the near-bottom water has distinct semi-annual and interannual variability. Dense water flows past Cape Adare in two pulses a year, near the March and September equinoxes, with more saline water released in March than the pulse later in the year. Interannual changes in salinity in the dense water follow the changes in salinity measured in Terra Nova Bay, suggesting advection of dense water between the polynya and the deep ocean within a year. Recent work suggests the tides and density of water in Terra Nova Bay are regulating the release of water from the trough and may provide a prediction of density and transport of the outflow.

