

Supporting Information for ”Stirring of sea ice meltwater enhances submesoscale fronts in the Southern Ocean”

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1. Figures S1 to S3

Introduction

The supporting information contains four additional figures.

The first figure is used to define the water masses referred to in the main text.

The second places the Seaglider deployment into a seasonal context by comparison with a co-located SOCCOM float (5904397). Specifically, this was used in the main text to

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determine when the mixed layer summer shoaling event occurred and from what depth.

The SOCCOM data is freely available via soccom.princeton.edu

The final figure gives the cumulative sum of local submesoscale Ekman Buoyancy Fluxes highlighting the increased variability during early summer.

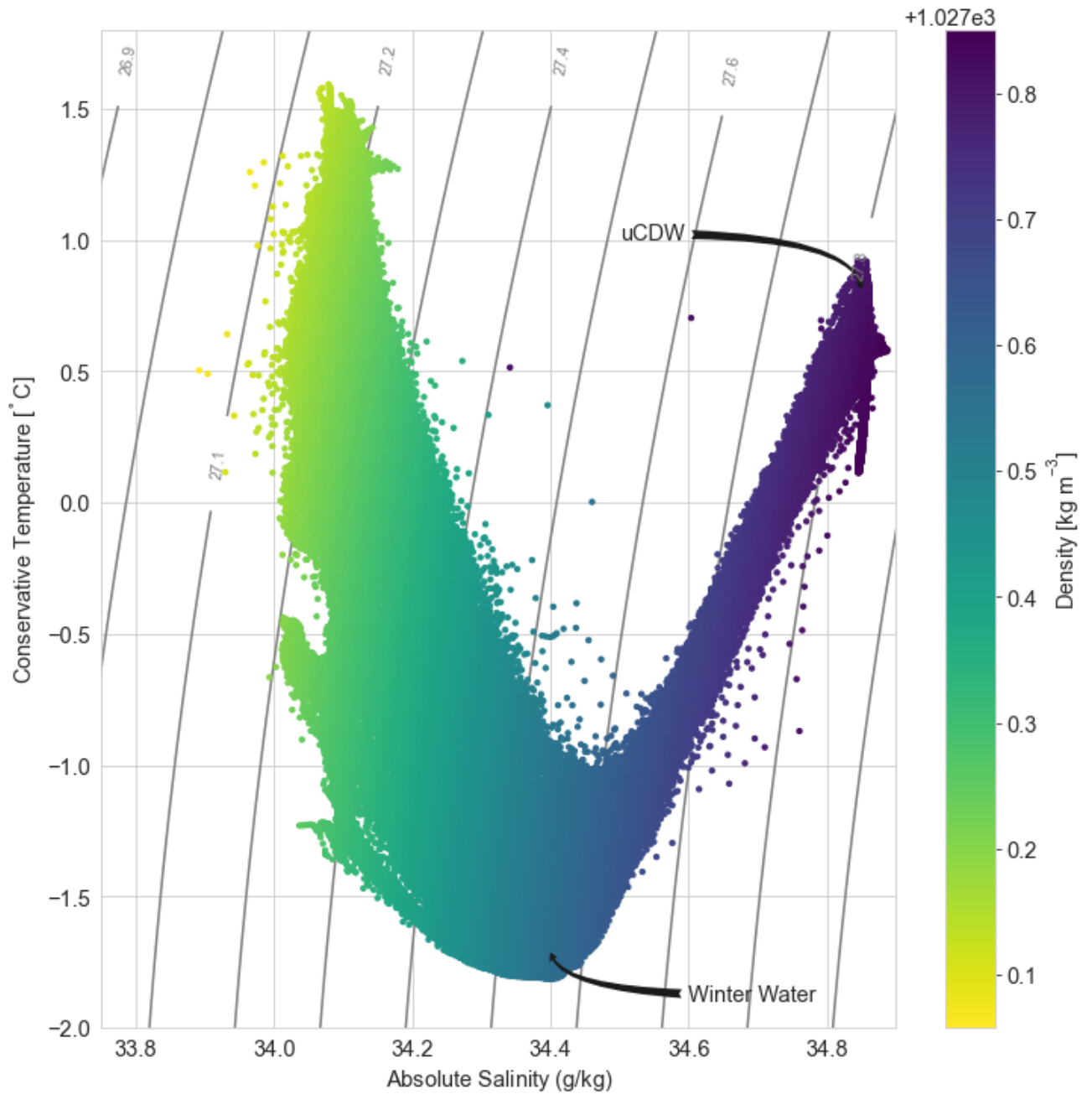


Figure S1. TS diagram for the full deployment. The definitions of Winter Water and upper Circumpolar Water are indicated with the arrows.

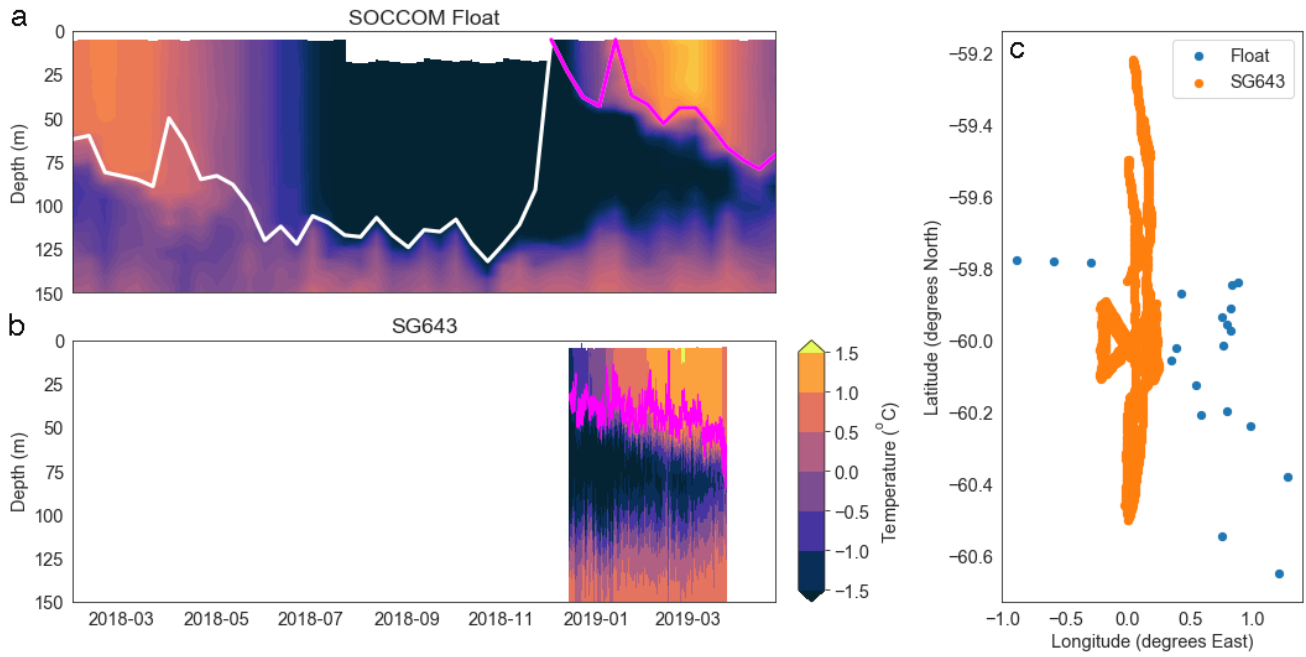


Figure S2. Colocated SOCCOM float (id: 5904397) compared with the Seaglider. a) Temperature section observed by the SOCCOM float. The white and magenta line is the mixed layer depth. The magenta line corresponds to the blue points in c). b) Temperature section observed by the Seaglider. The magenta line indicates the mixed layer depth. c) Location of the Seaglider (orange points) and SOCCOM float (blue points).



Figure S3. Time cumulative sum of submesoscale Ekman Buoyancy Flux.