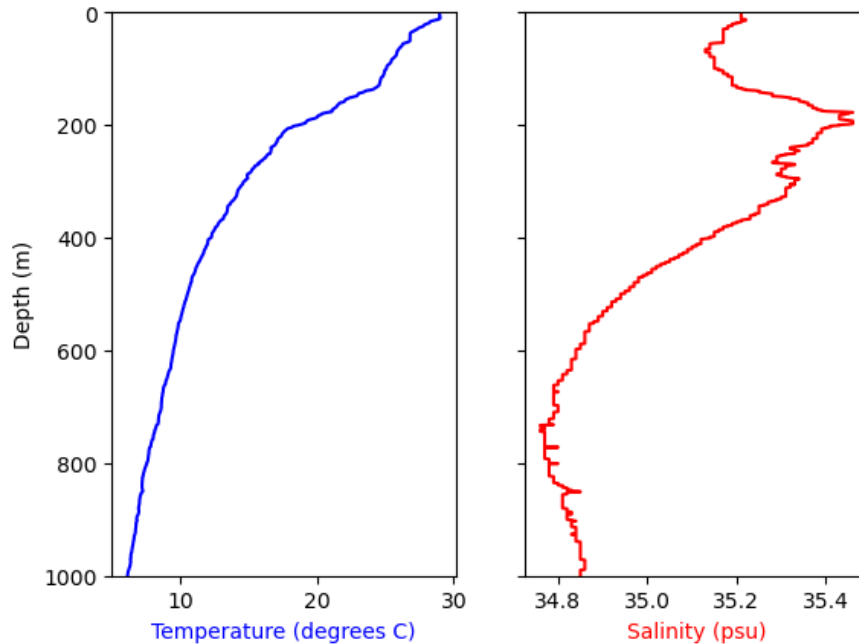


## GMSGEO001 P2 Assignment

### Part 1 - Profiles

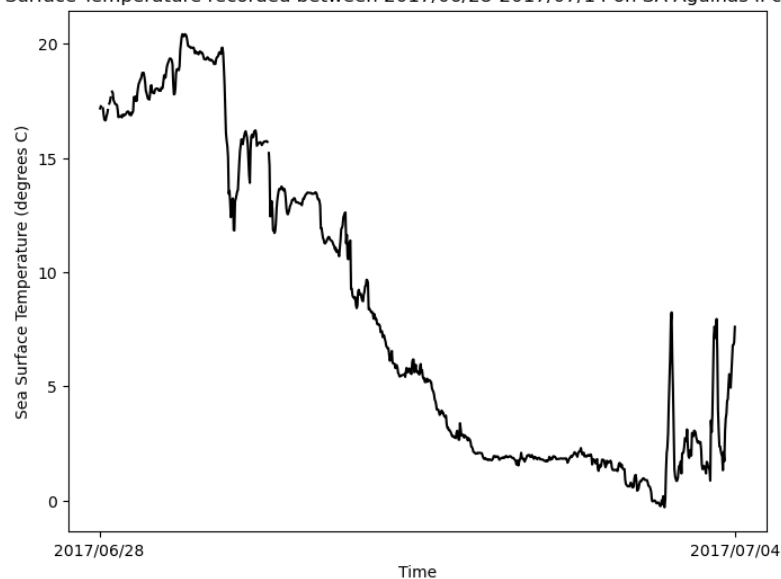
Temperature and Salinity Depth Profiles for data collected from CTD on 29/11/2008 at 06:52



**1** Temperature and Salinity data collected from a CTD on 29th November 2008 at 06:52 plotted against depth to show the depth profile of these variables. It is clear temperature increases as we go shallower. Salinity increases to a peak at around 200m depth and then decreases again slightly as we move towards the surface.

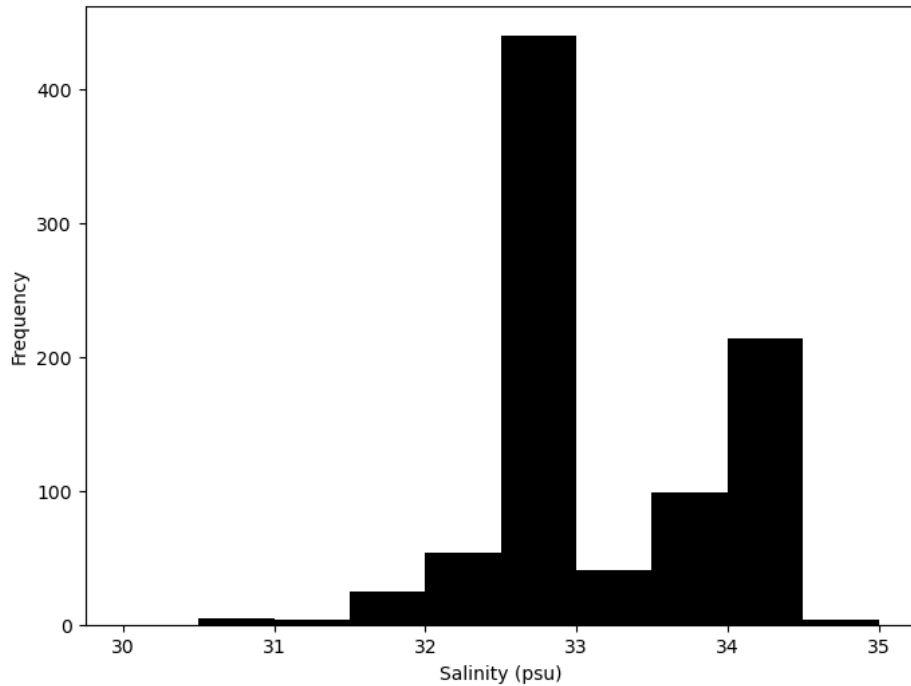
### Part 2 – Time Series

Time series of Sea Surface Temperature recorded between 2017/06/28-2017/07/14 on SA Agulhas II cruise of Southern Ocean



**2** SST Time series recorded on SA Agulhas II using a Thermosalinograph (TSG). The time series shows the SST between departing Cape Town on 28<sup>th</sup> June 2017 and arriving at the ship's southernmost location on 4<sup>th</sup> July 2017. The temperature clearly decreases rapidly as the ship moves towards the south pole.

Salinity distribution recorded between 2017/06/28-2017/07/14 on SA Agulhas II cruise of Southern Ocean



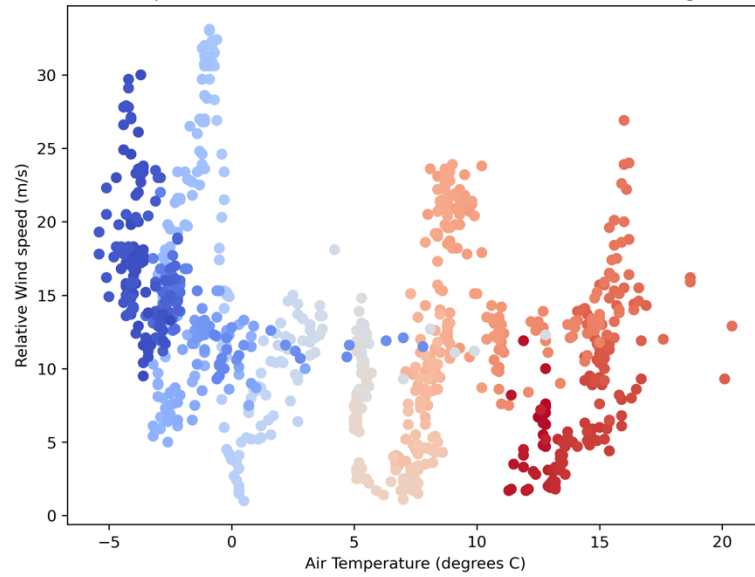
**3** Histogram to display the distribution of Salinity values recorded using a Thermosalinograph (TSG) on SA Agulhas II. The values used here represent leaving Cape Town on 28th June 2017 to arriving at the ship's southernmost location on 4th July 2017. We have used 0.5 psu bins here and it is clear the most frequently recorded salinity values were between 32.5-33 psu.

Temperature and Salinity statistics for data recorded between 2017/06/28-2017/07/14 on SA Agulhas II cruise of Southern Ocean

Variable	Mean	Standard Deviation	Interquartile Range
Sea Surface Temperature (degrees C)	8.146540624999998	6.747987572511703	11.76885
Salinity (psu)	33.11055267857143	1.1401502943531119	1.2725749999999962

**4** Table to show key statistics of SST and Salinity recorded from a Thermosalinograph off SA Agulhas II between departing Cape Town on 28th June 2017 and arriving at southernmost location on 4th July 2017. There is large variability in both SST and Salinity as we move into the Southern Ocean with large interquartile ranges for each.

Air Temperature vs Relative Wind Speed recorded between 2017/06/28-2017/07/14 on SA Agulhas II cruise of Southern Ocean



**5** Scatter plot of Air Temperature against Relative Wind Speed recorded from SA Agulhas II between leaving Cape Town on 28th June 2017 and arriving at its southernmost location on 4th July 2017. There is no clear linear correlation between relative wind speed and air temperature.