

## **Detecting the long-term trend in water masses in Prydz Bay and adjacent regions**

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### **Abstract**

Antarctic Bottom Water (AABW) formation is a critical component of global thermohaline circulation. There is a great uncertainty about the AABW production in the Prydz Bay. Lack of winter observations is the main reason for the uncertainty. The water mass properties on the continental shelf and off the continental slope are critical factors for the formation of bottom water. In addition to obtain winter stratification of water column through deploying a mooring array on the Prydz Bay shelf, it is important to investigate whether long-term trends exist in the summer water mass properties on the shelf and off the slope. Any such long term trend would either increase or decrease the potential of the bottom water formation in the region. Proposed study here is to detect trends in the properties of the shelf water and Circumpolar Deep Water (CDW) in the region from historical CTD data that were usually taken during summers. We will also to explore any connections between the oceanic trends with long term changes in atmospheric forcing. The result from this exploratory study would build a benchmark for our on-going field campaign and guide us on future research planning.