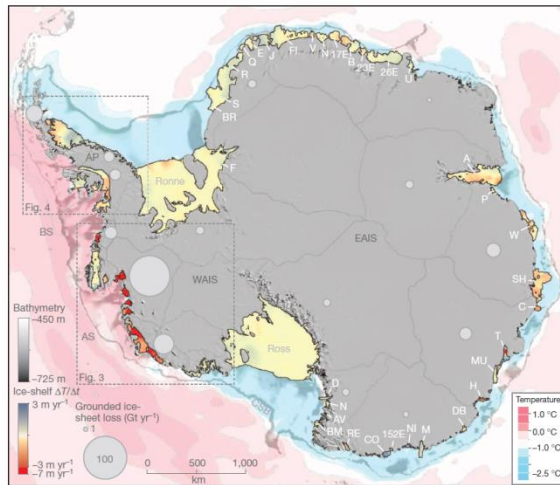




# The Filchner Ice Shelf Project

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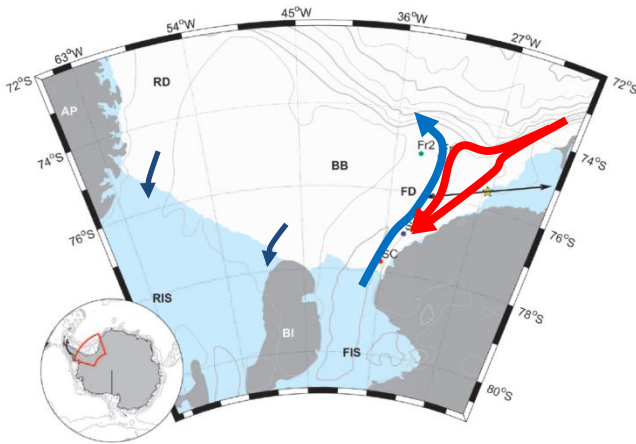


Pritchard et al, 2012

1. Cold outflow, bottom water formation
2. Warm inflow, ice shelf melt
3. Sub-ice shelf processes and circulation

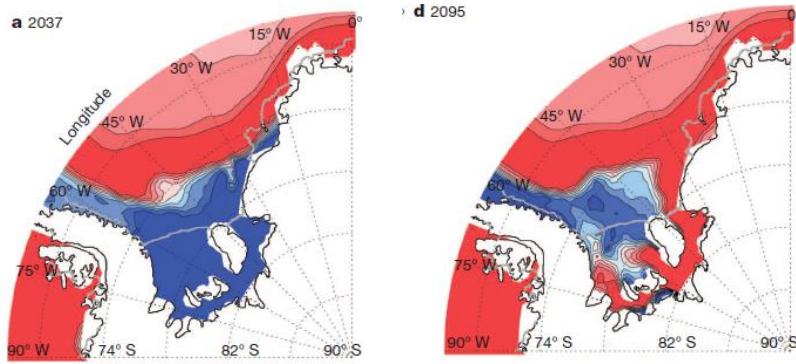
Weddell, Aisses, ObsFRIS, WARM...

# 1. Cold outflow – bottom water formation

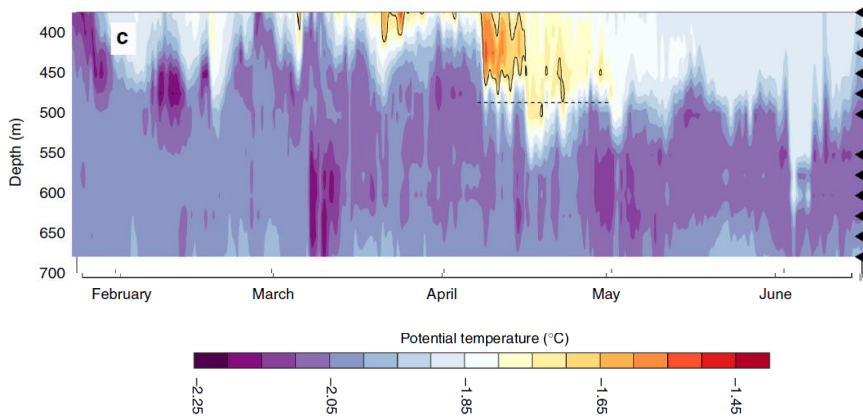


- Filchner overflow:  $1.6 \times 10^6 \text{ m}^3\text{s}^{-1}$  Ice Shelf Water contributing to the formation of Antarctic Bottom Water
- Long-term monitoring of the Filchner overflow by one (or more) moorings on the Filchner sill
- Plume dynamics

# 2. Warm inflow



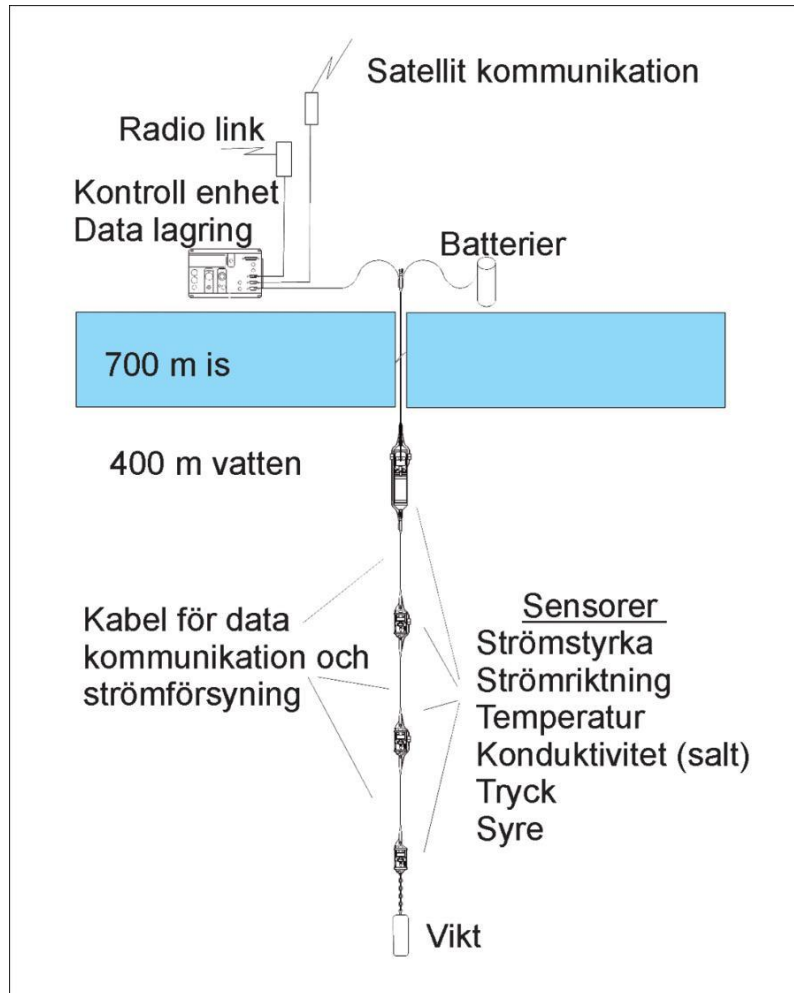
Hellmer et al, (2012)



Darelius et al, (2016)

- Climate model suggests dramatic increase in basal melt due to flooding of warm water
- Quantify and understand the flow of warm water across the shelf break towards the Filchner Ice shelf
- Mooring arrays, numerical modelling (realistic and idealized), laboratory experiments

# 3. Sub ice shelf processes and circulation



- Ice shelf cavities are very difficult to access and observe – they are LARGE and covered by hundreds of meters of ice
- BAS and AWI are making a huge effort to instrument the Filchner ice shelf cavity: oceanographic moorings and measurements through warm water drilled access holes
- Bergen is contributing with two mooring system.