



OCEAN:ICE



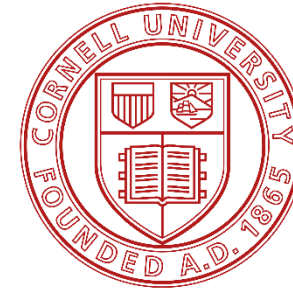
**British
Antarctic Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

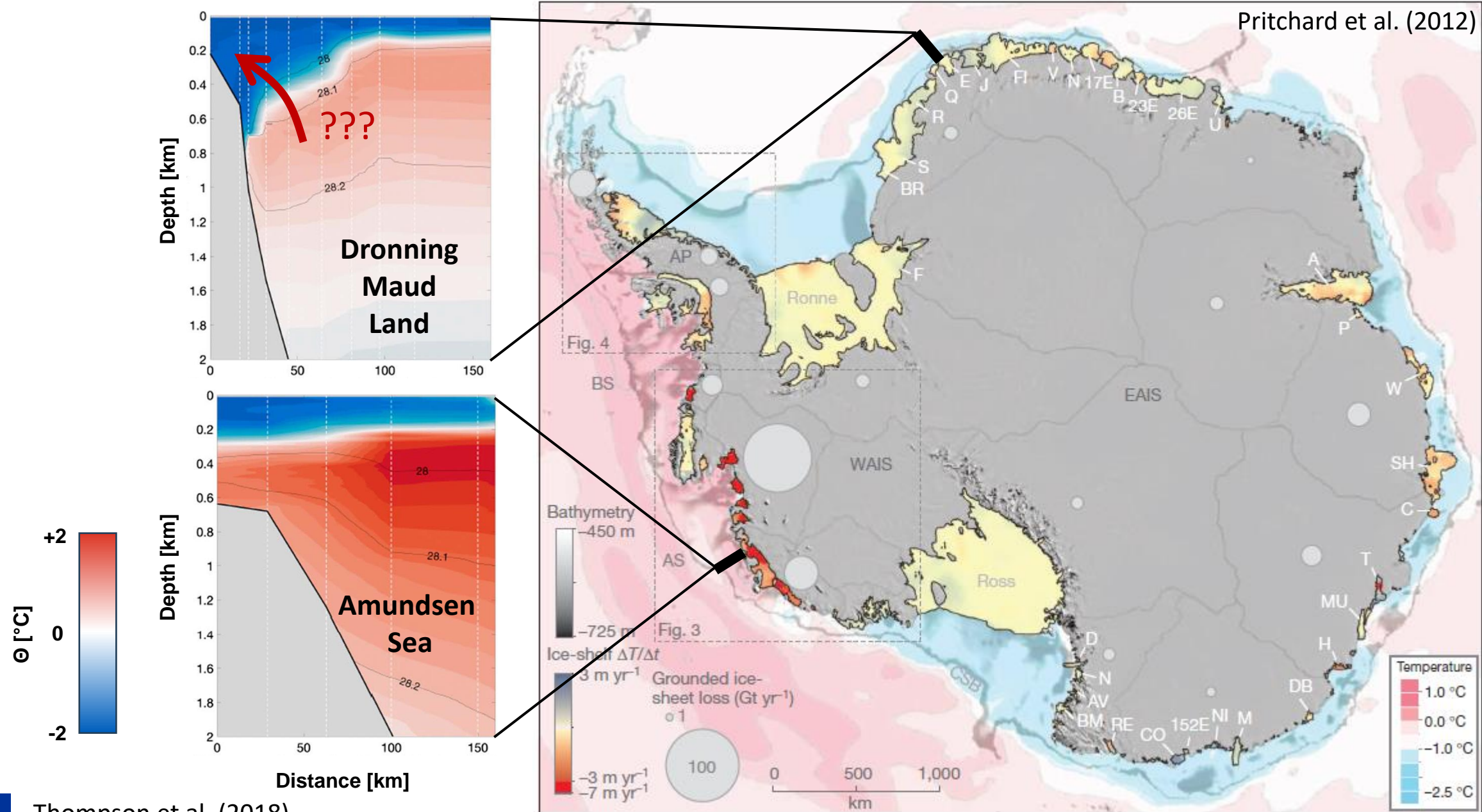
Ocean-Cryosphere Exchange in Antarctica: Impacts on Climate and the Earth System

23-24 Fieldwork on Fimbul Ice Shelf

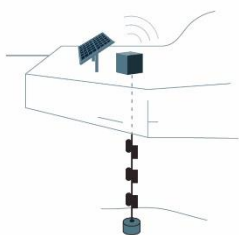
Peter Davis & the TONe Fimbul field team
OCEAN:ICE Annual Project Meeting
23rd September 2024



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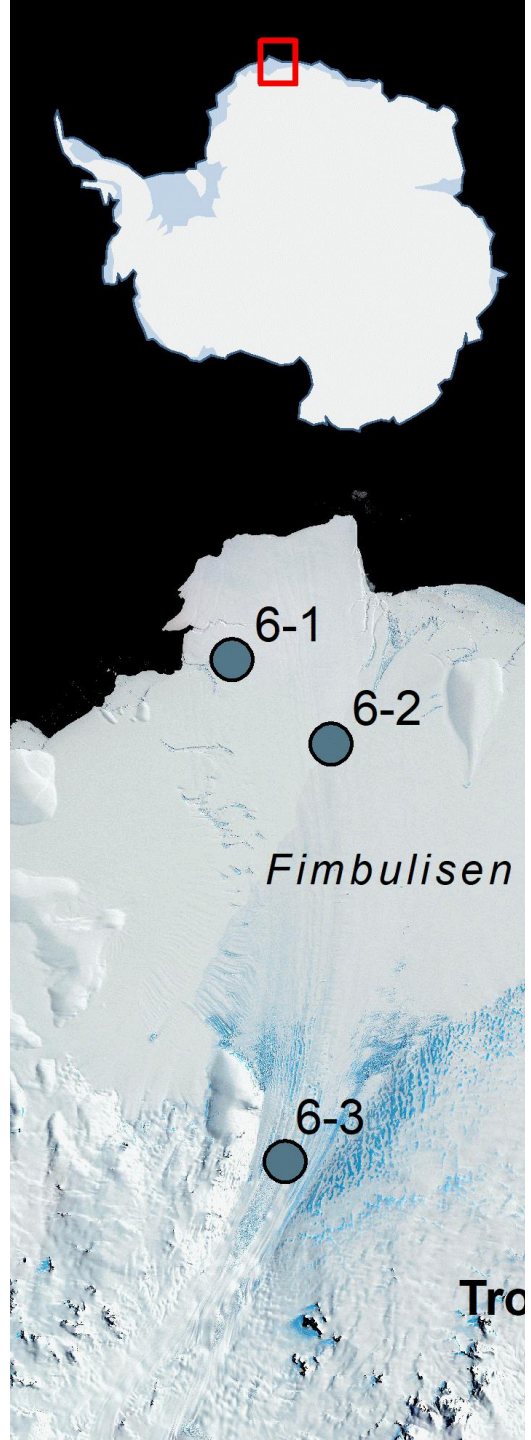
FIO - Fimbulisen Ice-shelf Observatory



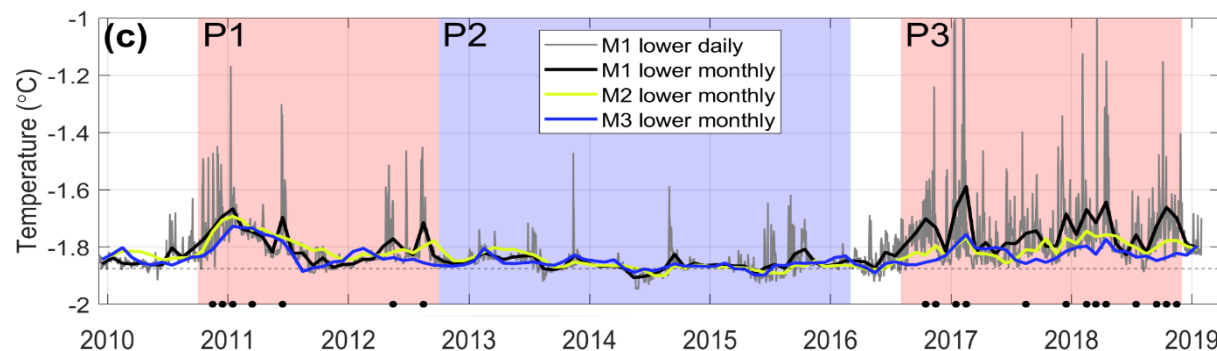
Time series established in 2009

Monitoring ocean properties beneath the largest ice shelf in DML

Renewed by hot-water-drilling campaign 2023/24

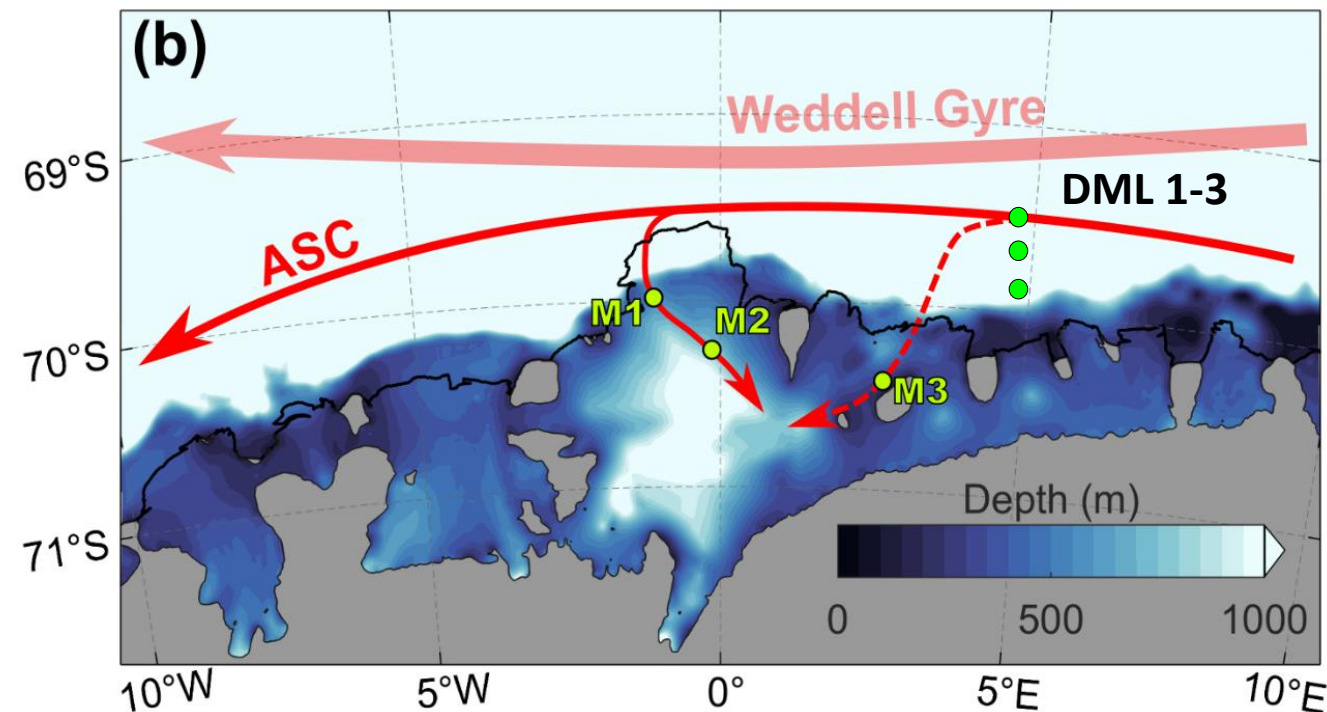


Existing 14 years of ice shelf cavity observations →



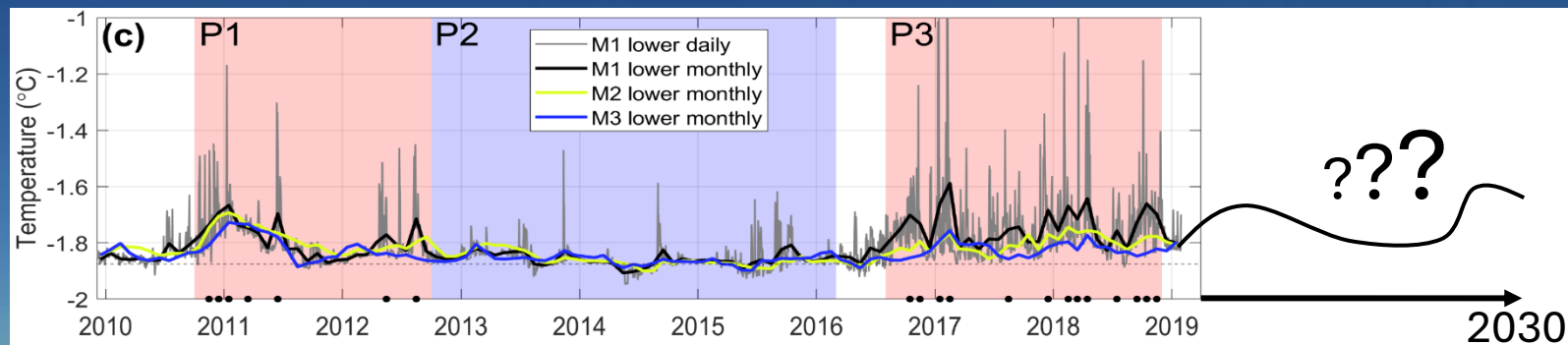
3 under-ice shelf ocean moorings operating since 2010, deployed below <400 m thick ice

2-3 open-ocean moorings operative over the shelf/slope since 2019





11 participants
UiB, BAS UK,
CNRS-Grenoble,
Cornell University
USA, NPI



TONE FIO Logistics 2023/24:

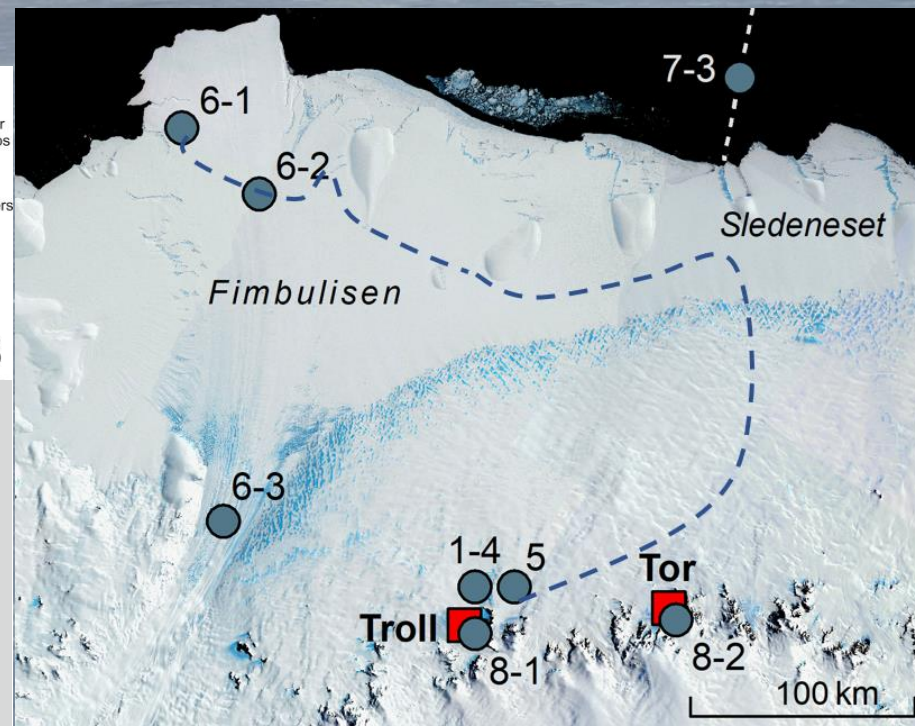
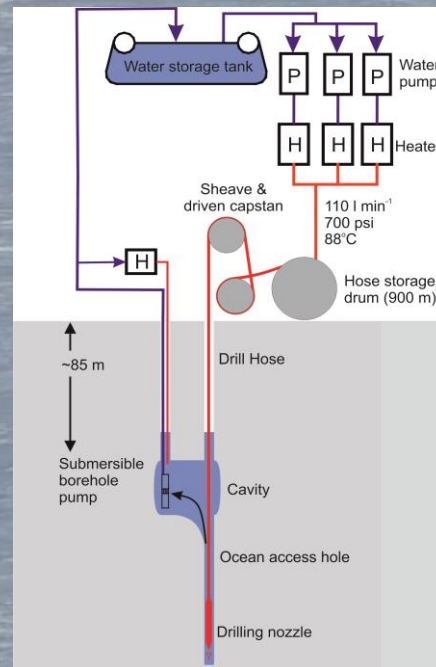
11 people, ~50 day deep field
operations to establish 6-1 & 6-2

10-15 tons science & drill cargo
+ fuel; bulk shipped December
2022 from Tromsø

2024/25 air-supported re-visit
& reconnaissance of potential
establishment of site 6-3



Tractor-traverse from Troll,
~1500 km round trip at 12 km/h





Ocean observations: temperature, salinity, velocity



Ocean observations: temperature-salinity comparison

Depth [m]

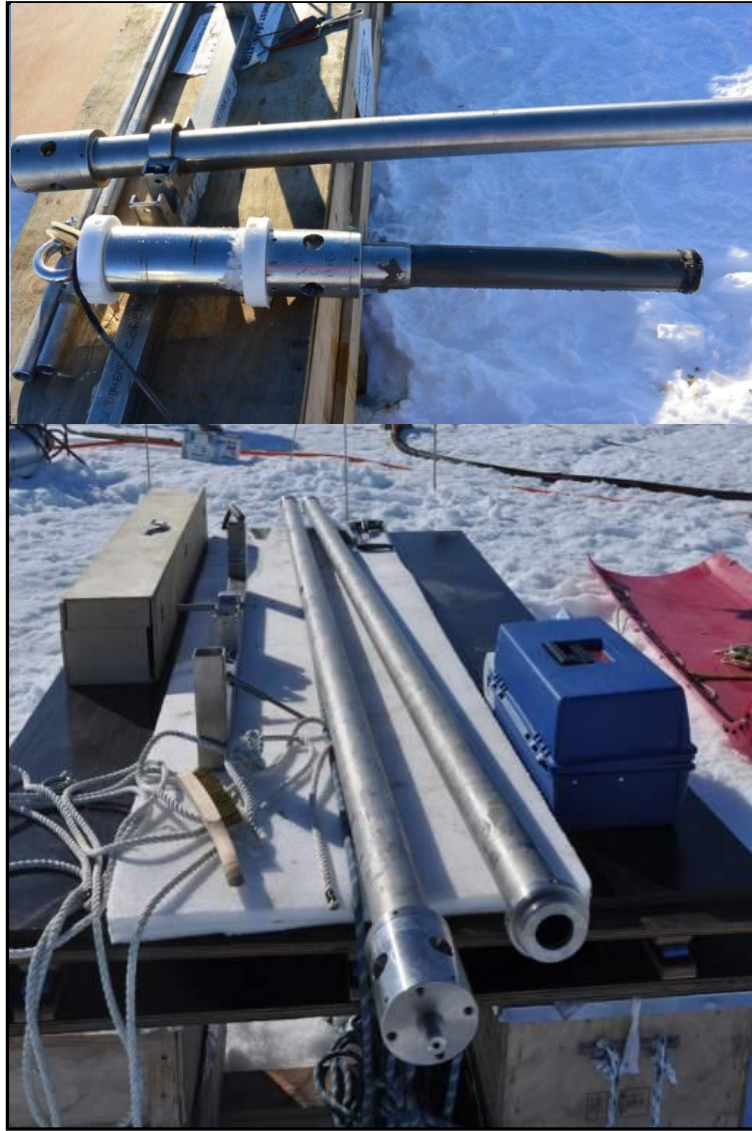
Temperature [°C]

Temperature [°C]

Salinity [psu]



Ocean observations: water and sediment sampling



Ocean observations: Icefin ROV



Ocean observations: long-term moorings



Ocean observations: boundary layer

