

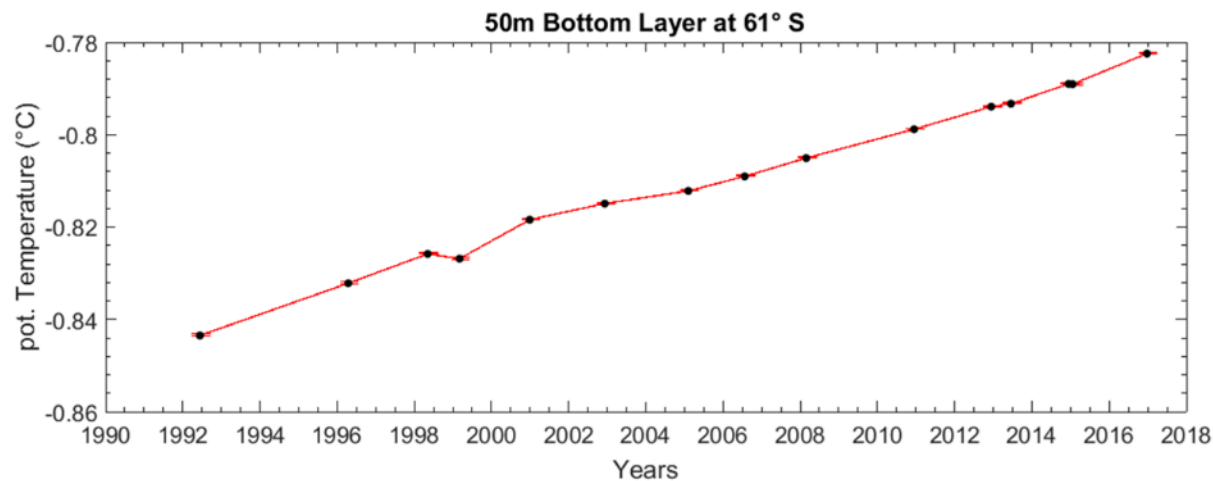
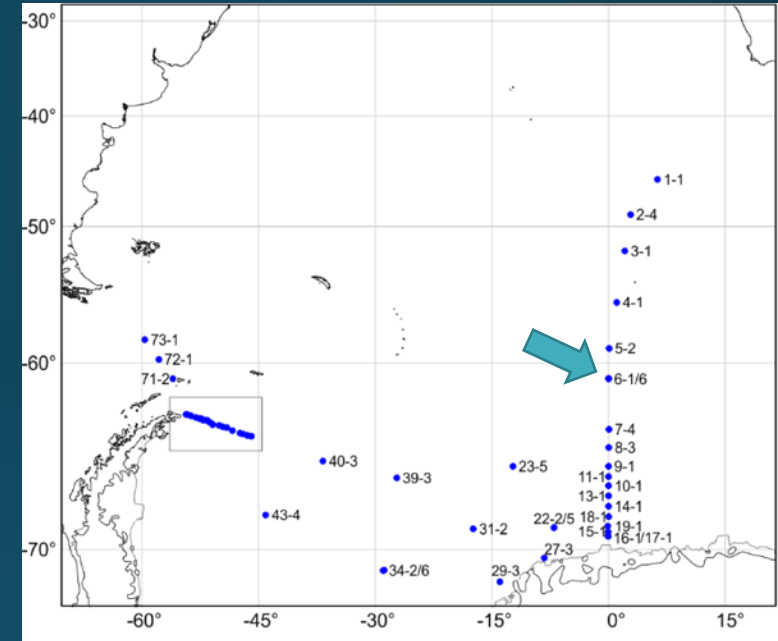
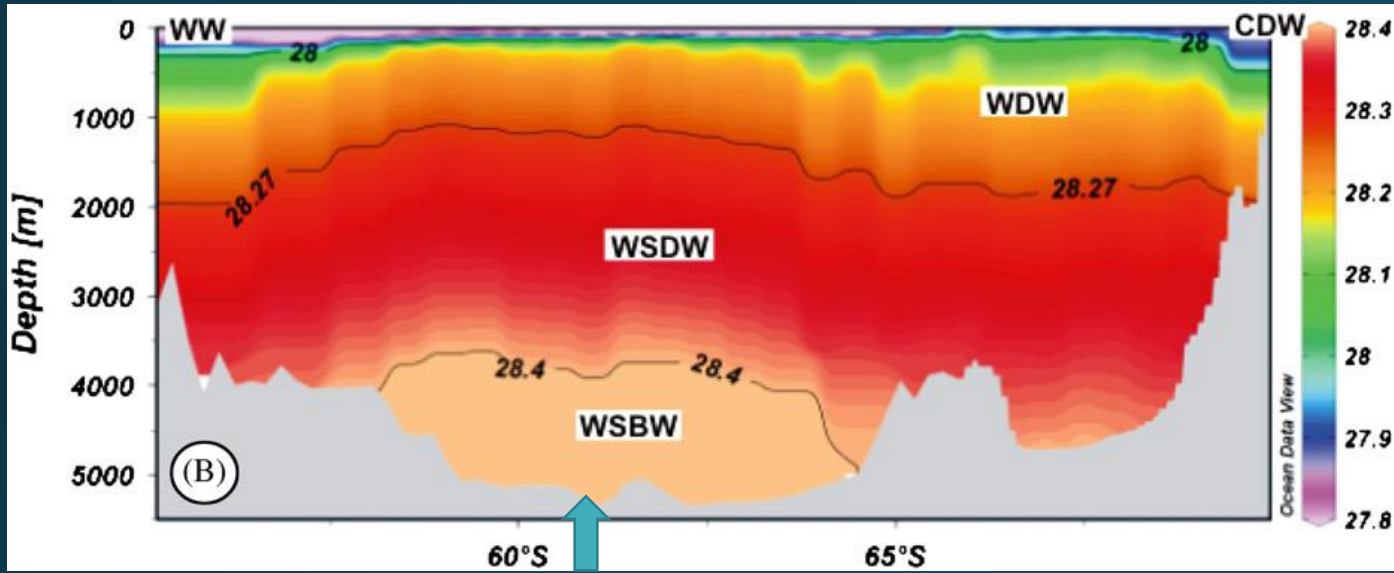
Weddell Gyre circulation and water mass formation

from long term observations to process studies to observing systems

Olaf Boebel, Ilse van Opzeeland, Nicolas le Pailh, Krissy Reeve, Gerd Rohardt and
Torsten Kanzow and Eberhard Fahrbach



Weddell Sea Bottom Water - decadal warming trend



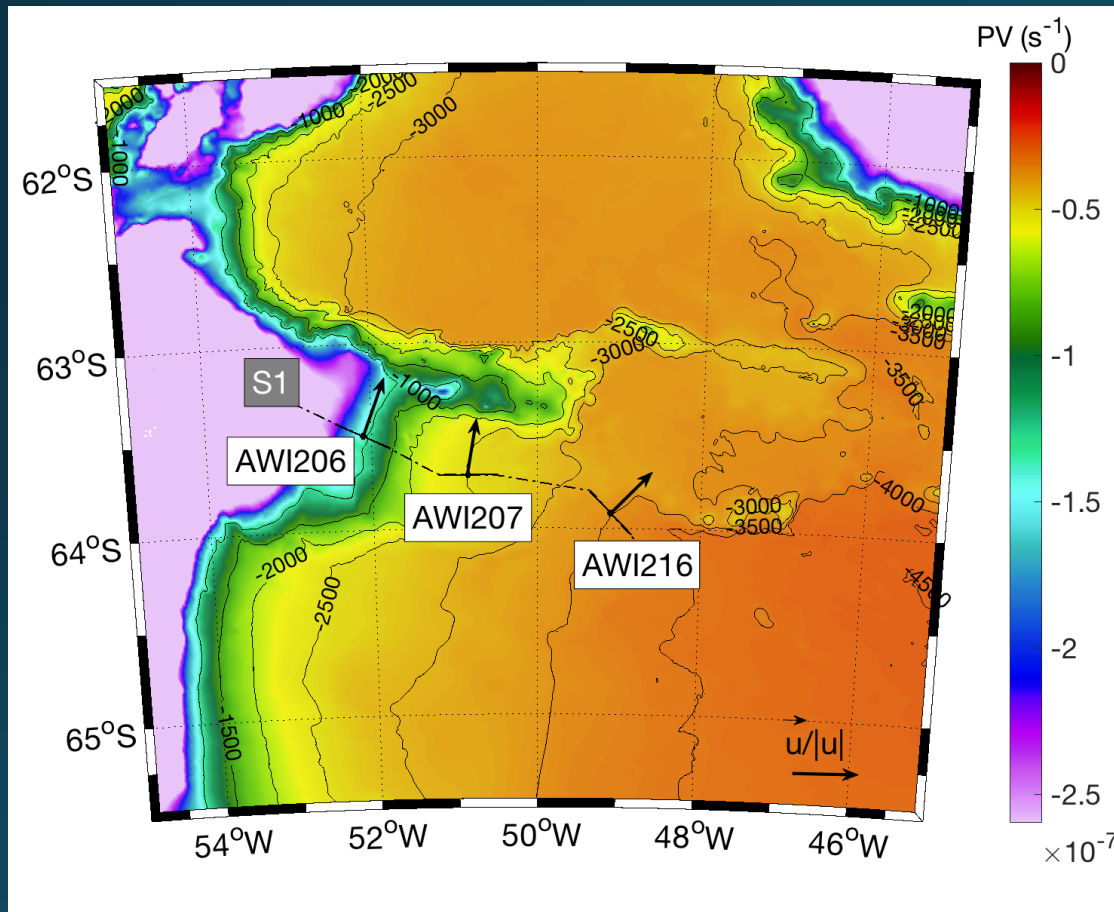
1992: **-0.8435°C**

25.12.2016: **-0.7825°C**

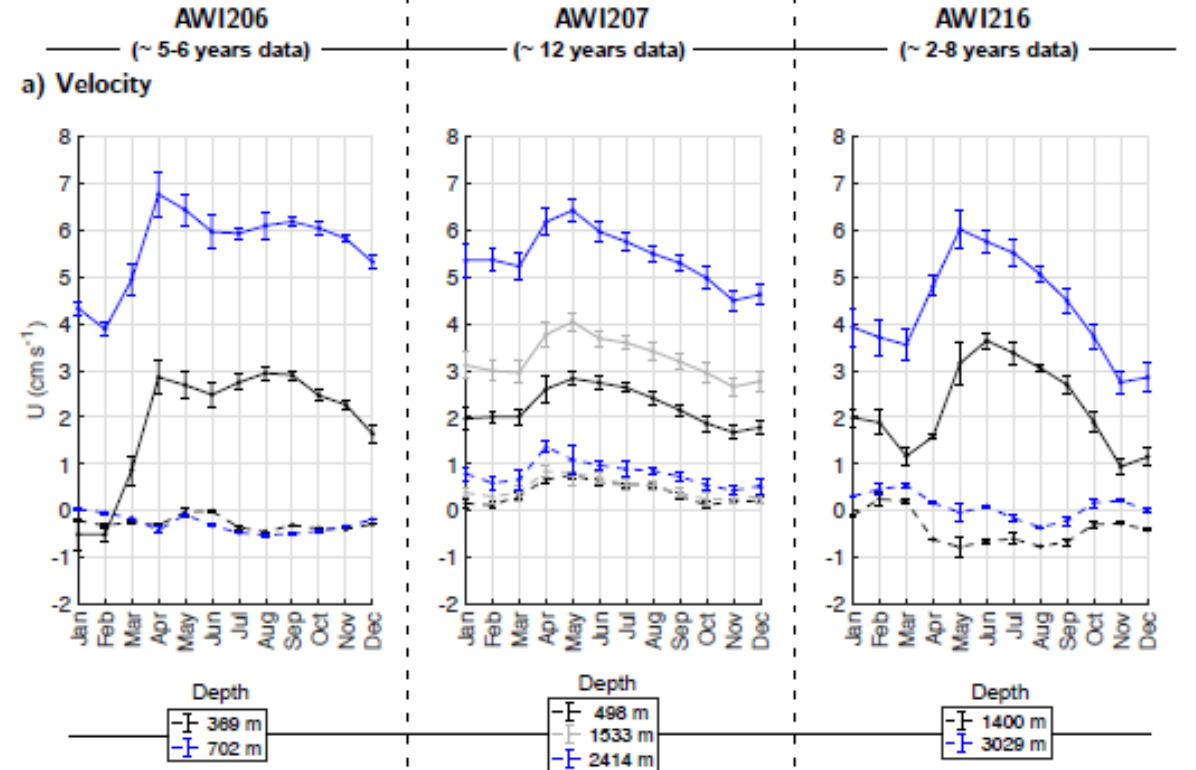
0.061°C increase in 25 years

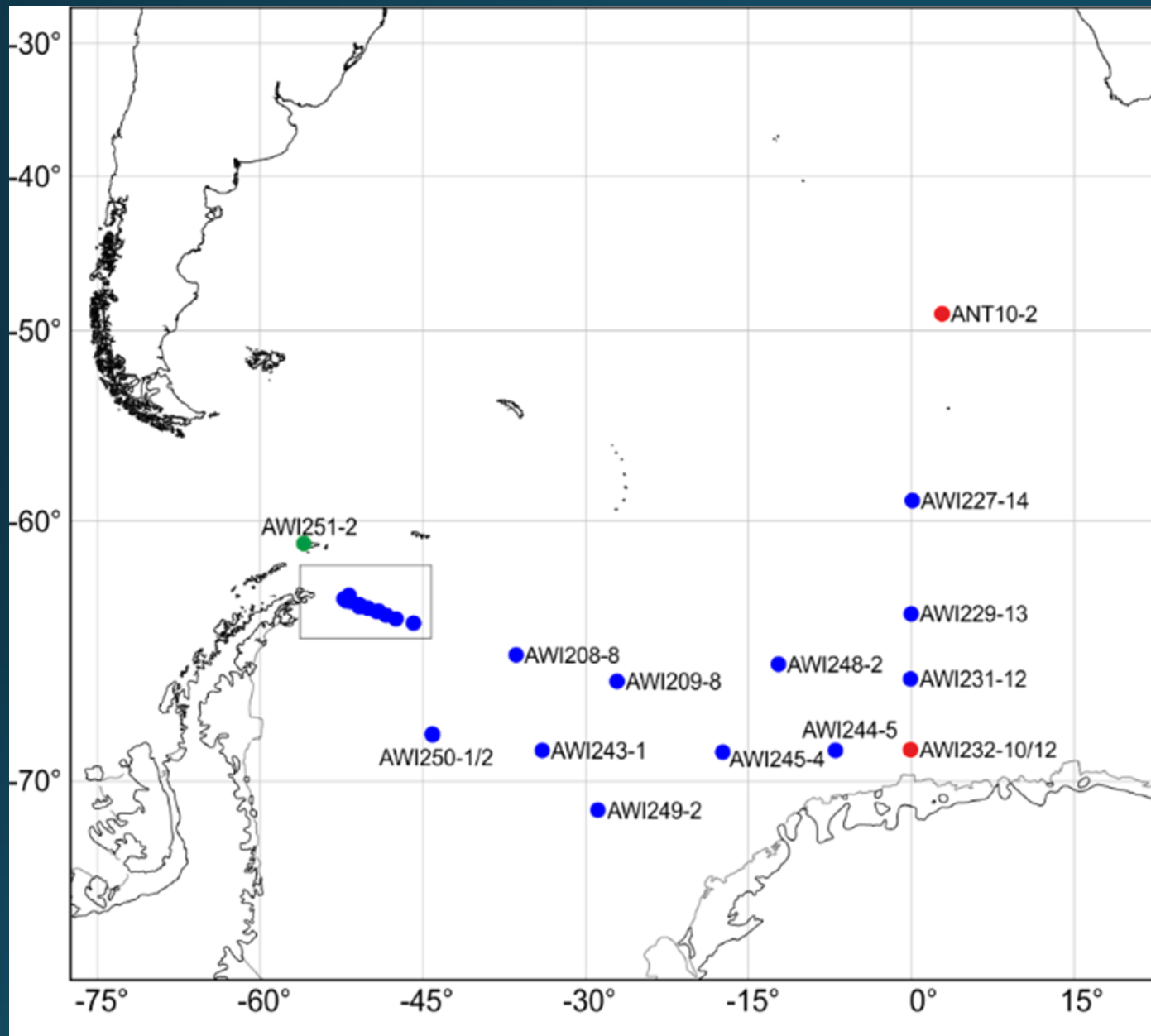
or **0.024°C** per decade

Weddell Sea Deep Water - seasonal variability of outflow



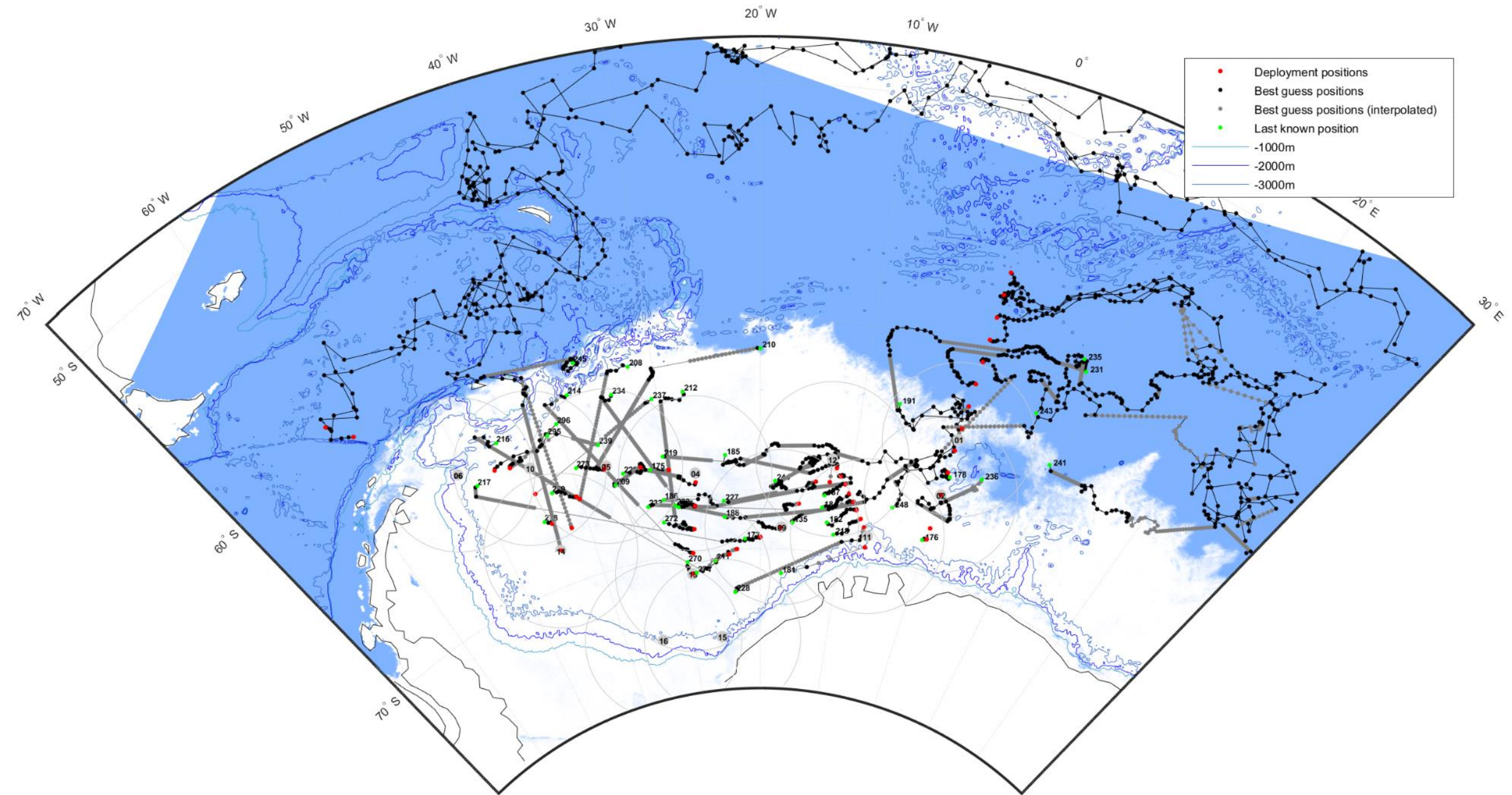
Seasonal variations of the outflow



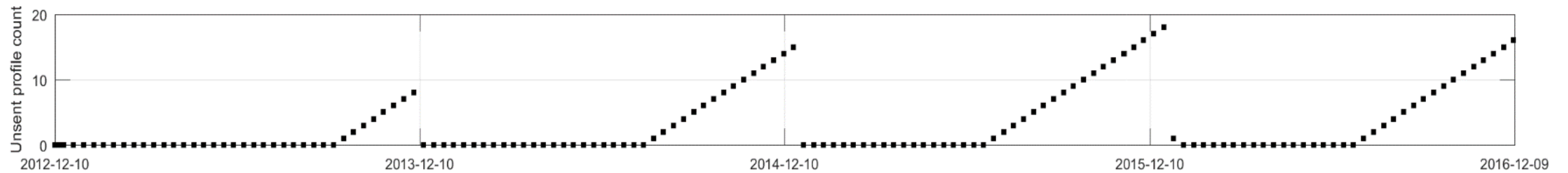
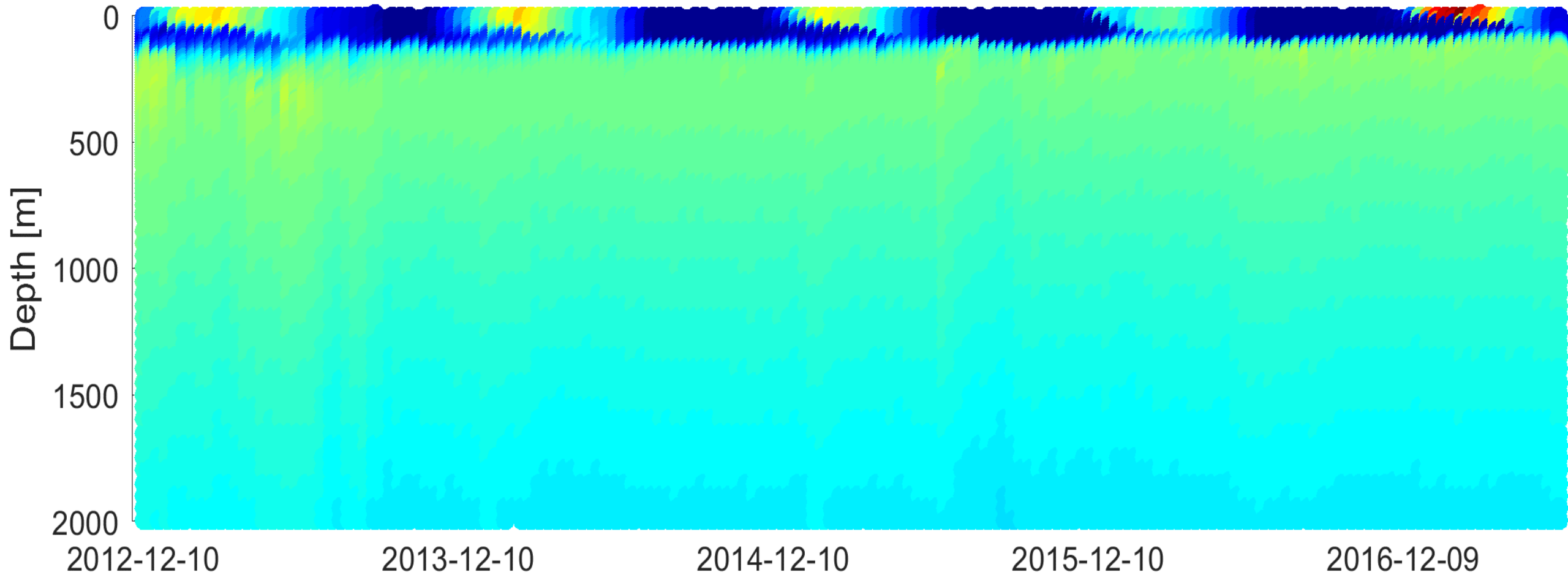


- Moorings with
 - (Bottom) TS logger
 - (Bottom) Current Meter
 - ADCPs
 - Passive Acoustic Recorders
 - Sound Sources
- Ice resilient Argo Floats
- Repeat CTD section / single casts
- VM-ADCP and thermosalinograph
- Turn around every 2(3) years,
- 4h station time per operation

14-Jun-2017 02:23:56

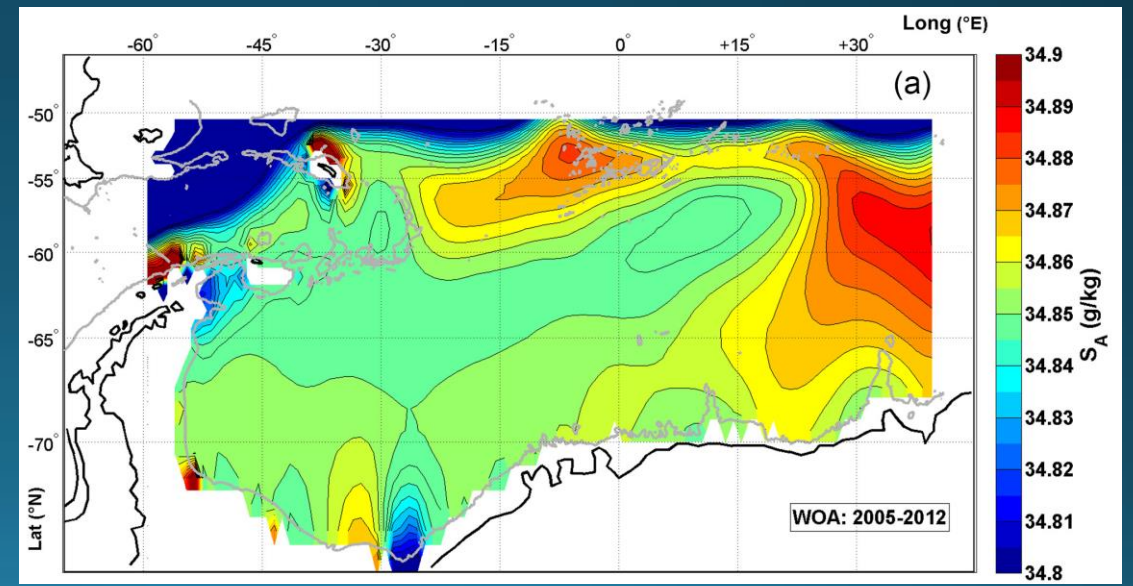
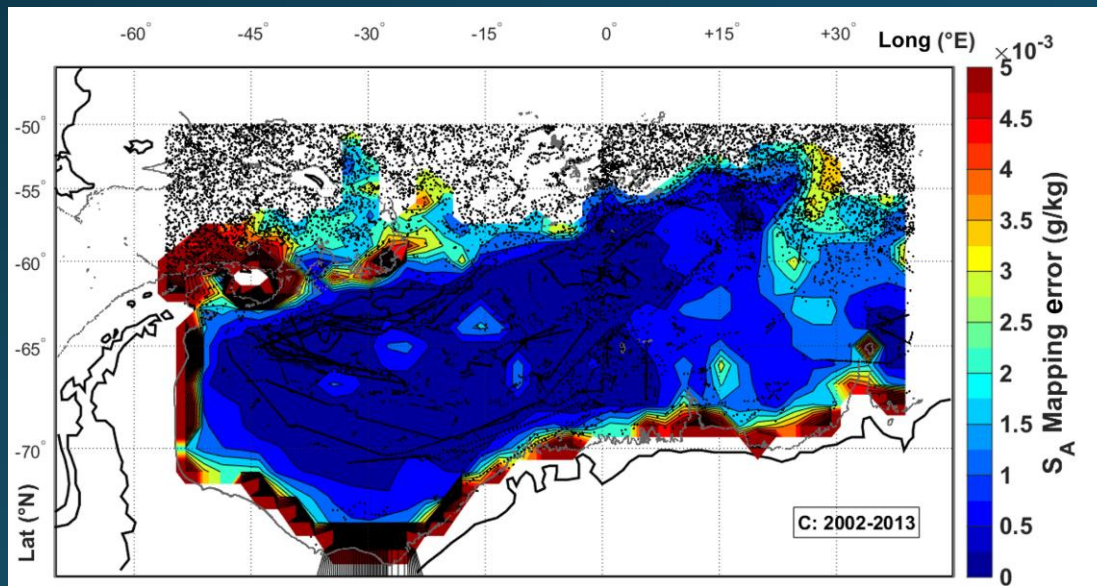
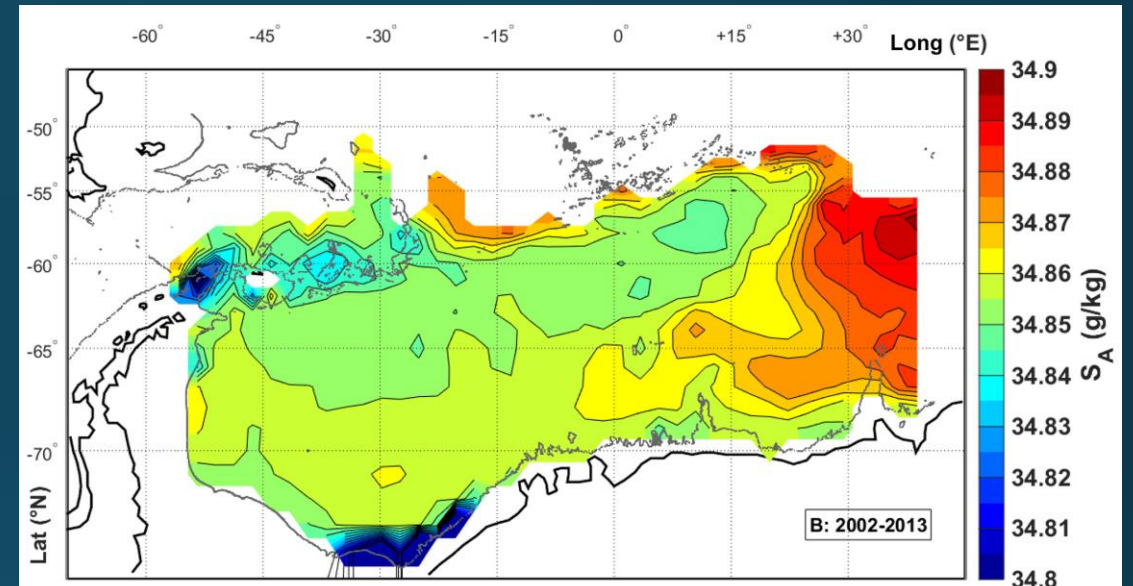
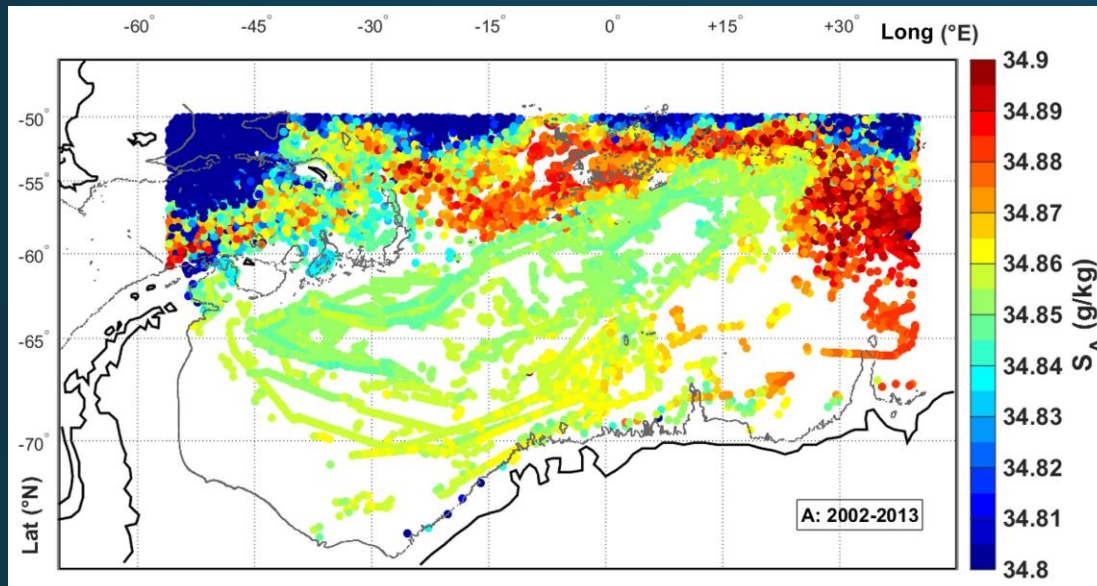


Float 243 @ 08-Jun-2017 02:48:15 (Antarctica)



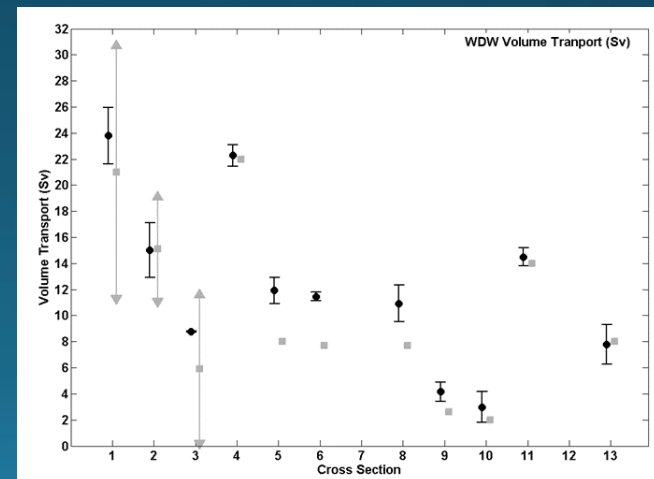
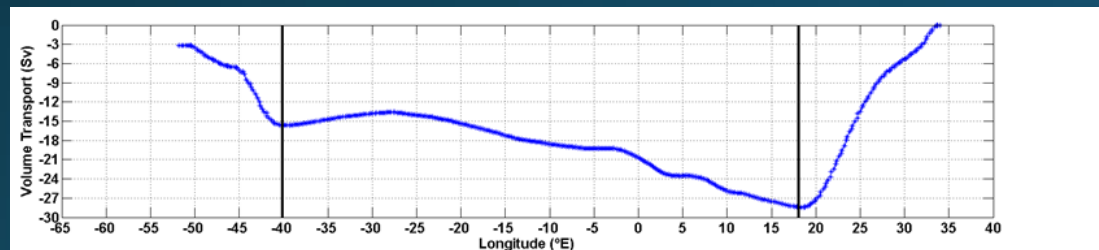
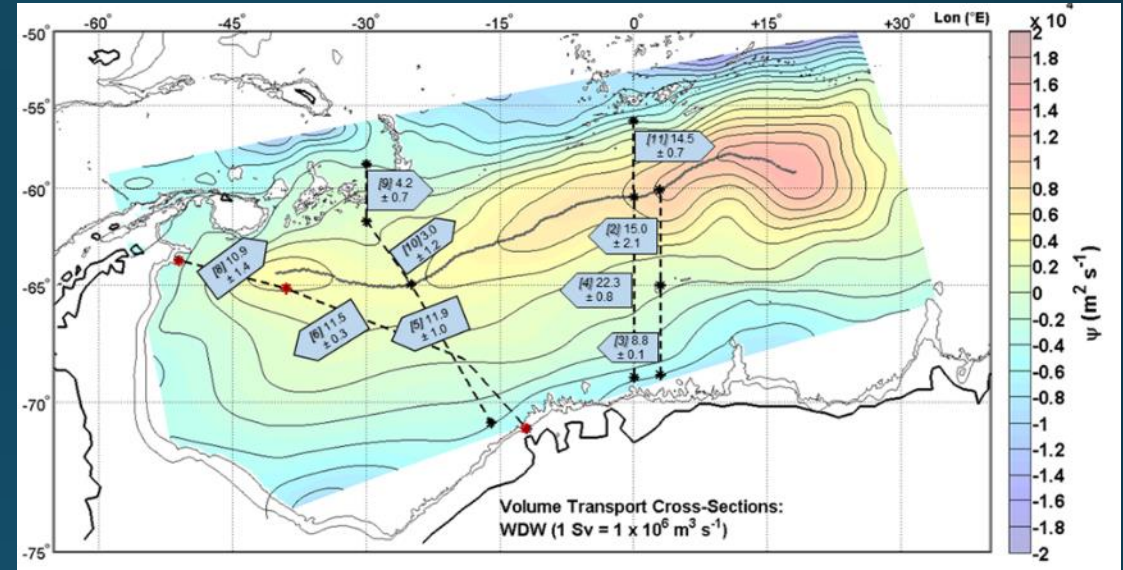
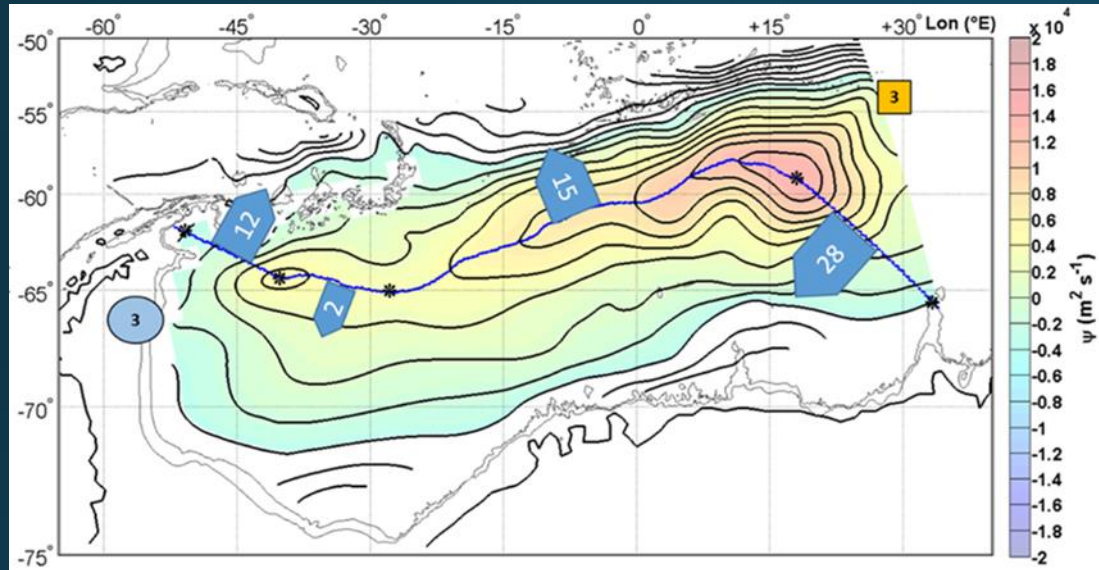
Warm Deep Water

- absolute salinity @ 800m



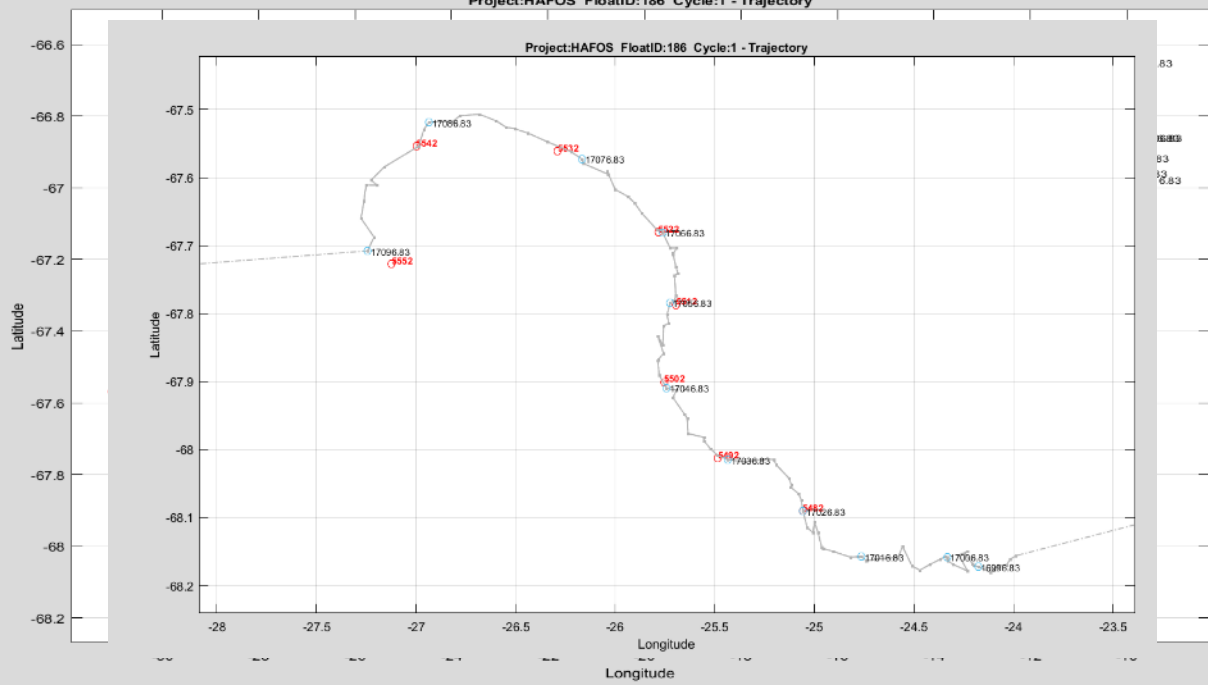
Warm Deep Water

- transport and circulation

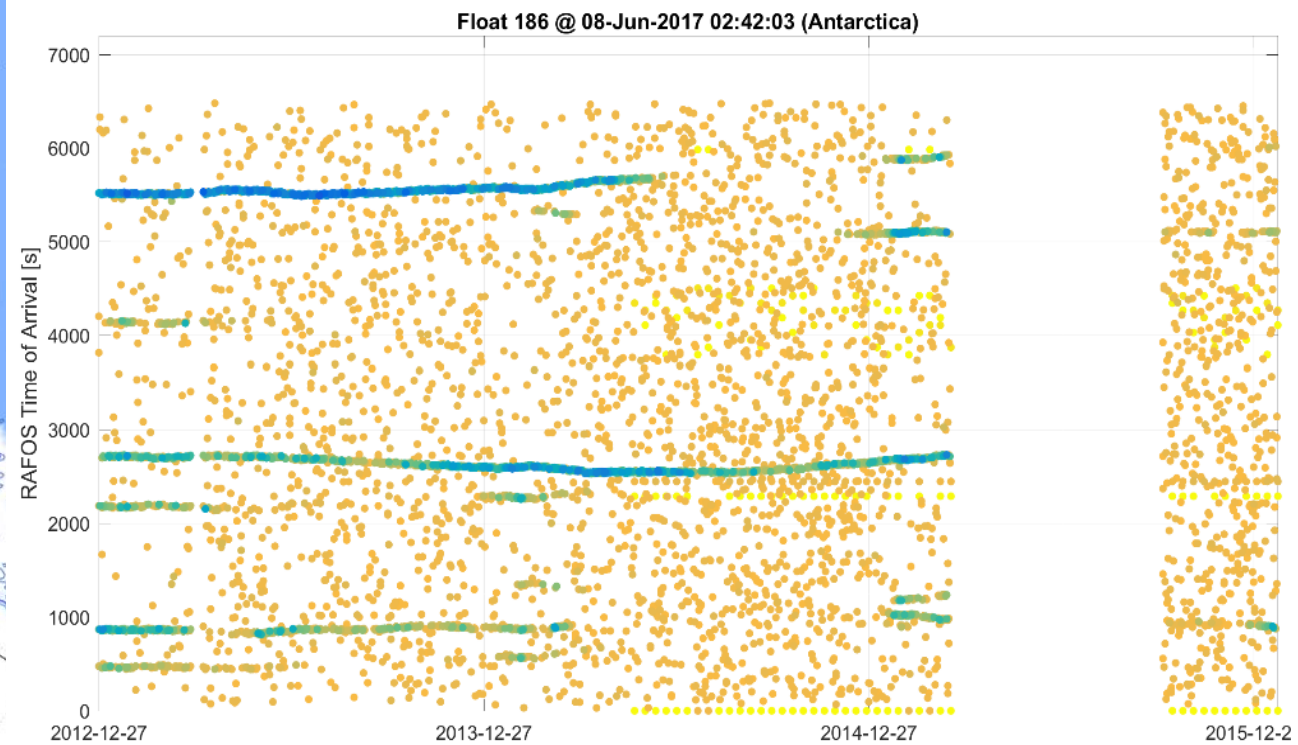




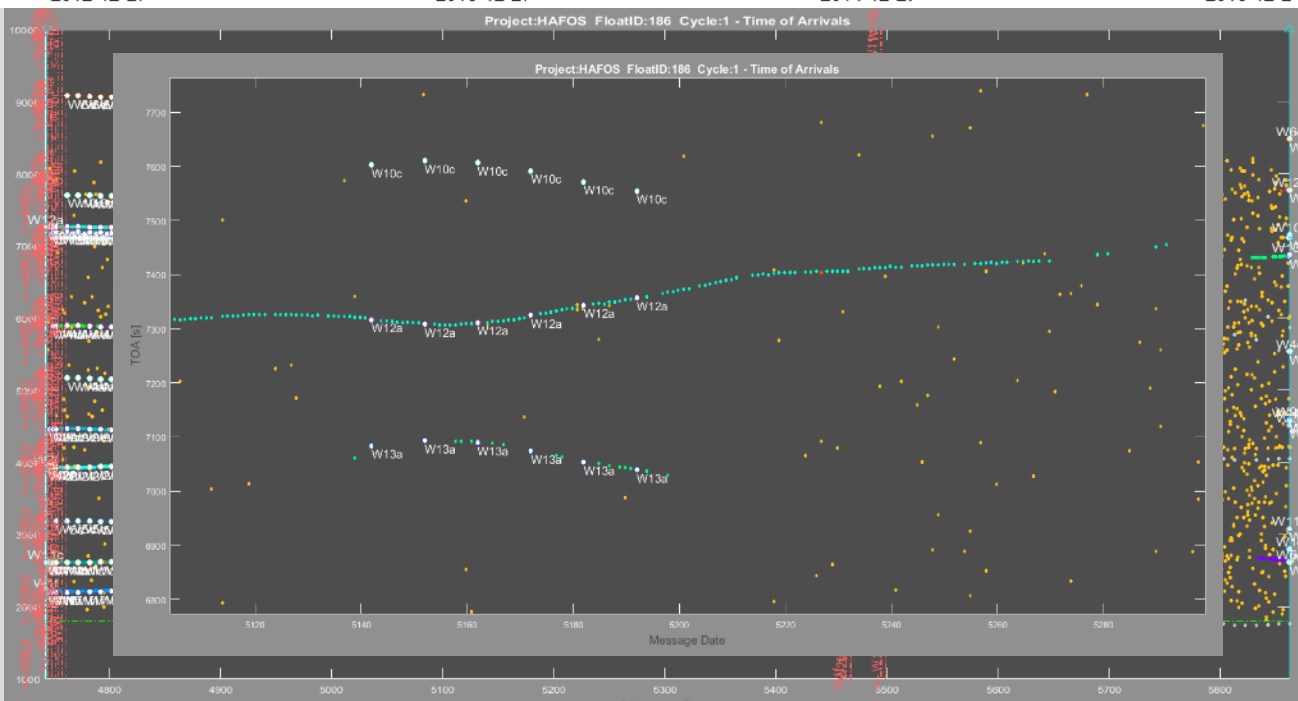
Project:HAFOS FloatID:186 Cycle:1 - Trajectory



Project:HAFOS FloatID:186 Cycle:1 - Trajectory

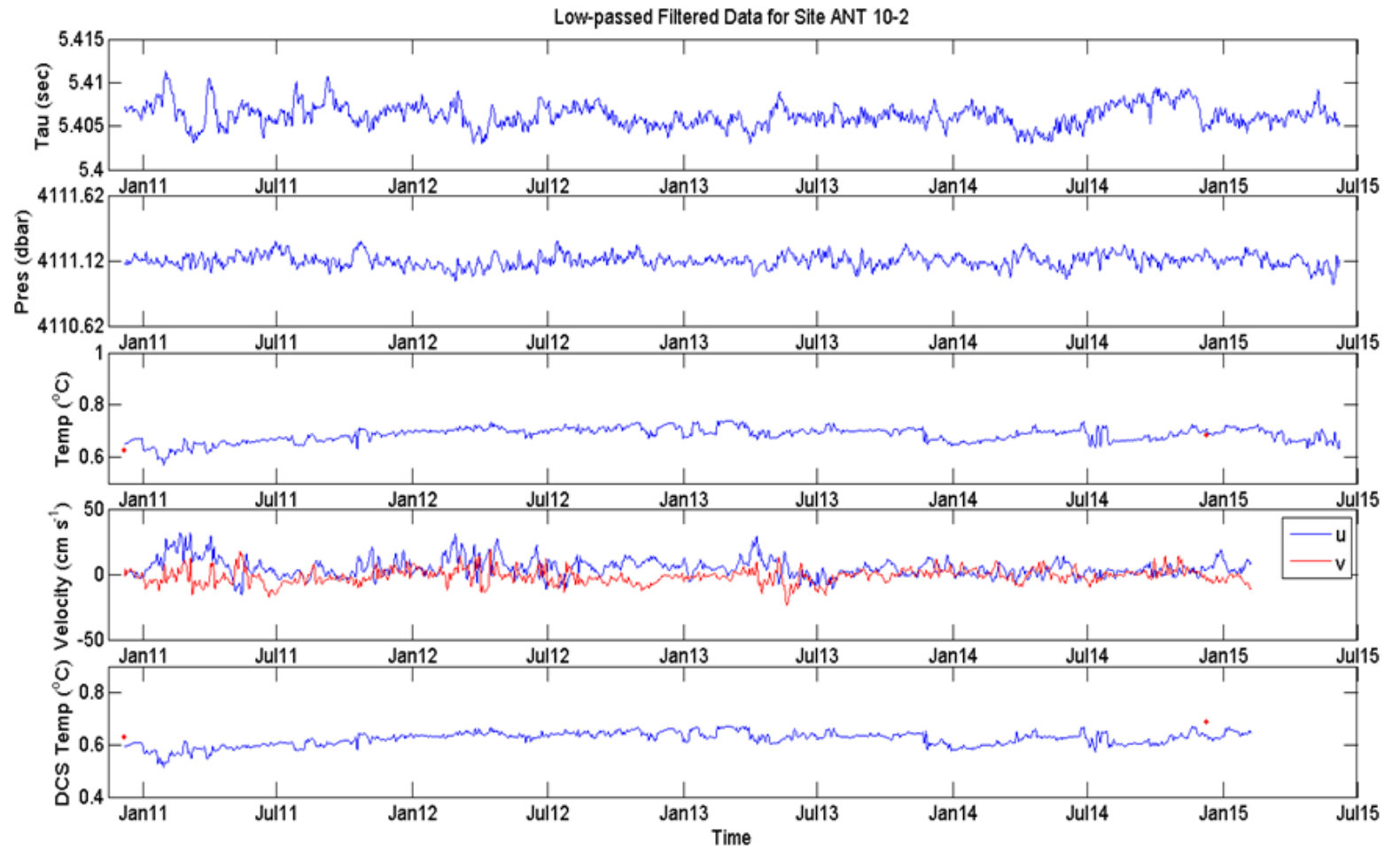
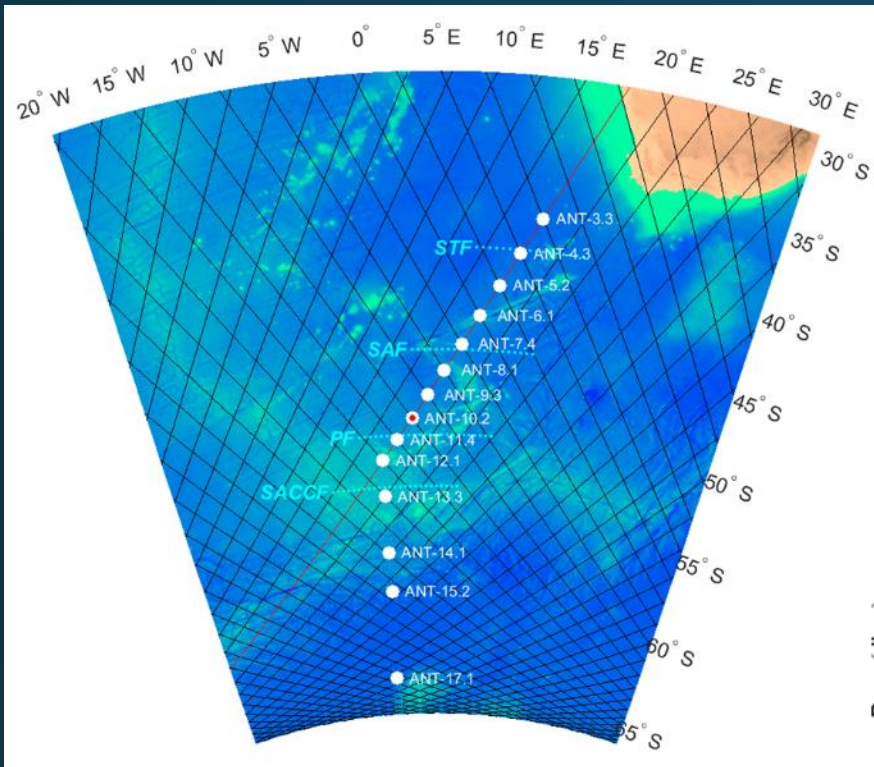


Float 186 @ 08-Jun-2017 02:42:03 (Antarctica)

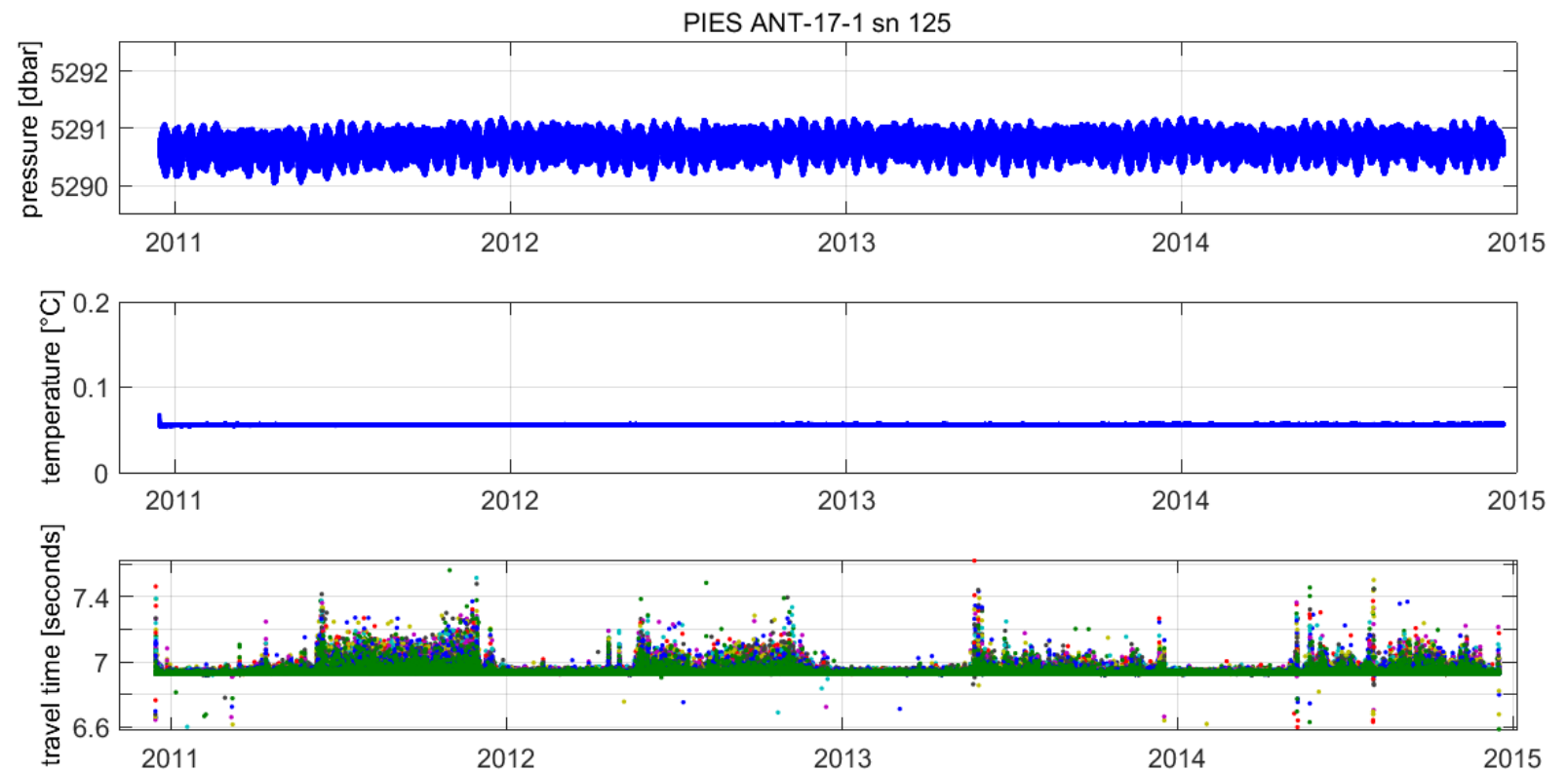
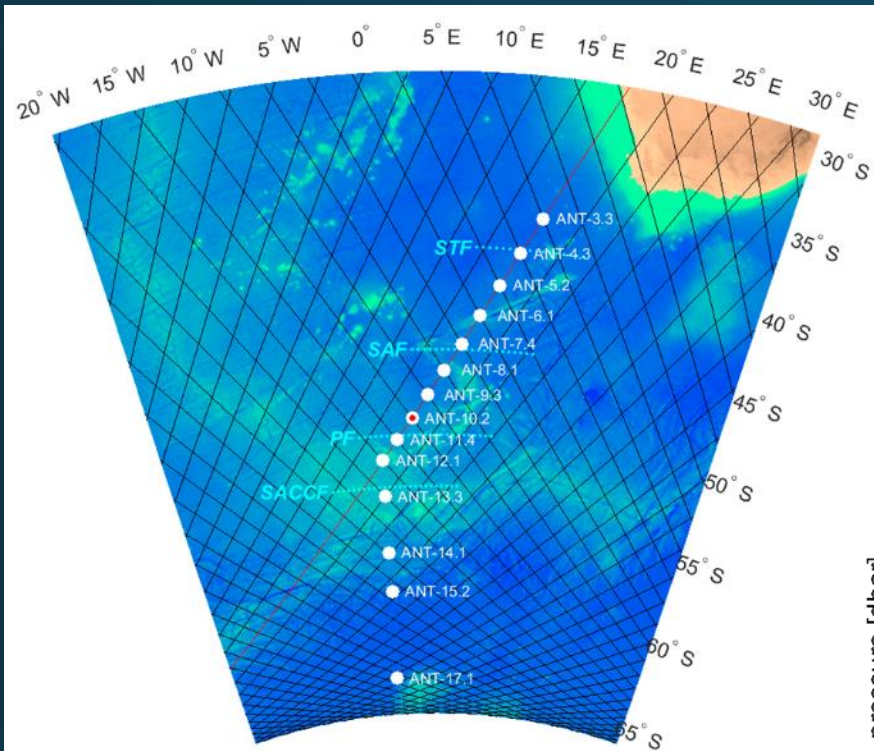


Project:HAFOS FloatID:186 Cycle:1 - Time of Arrivals

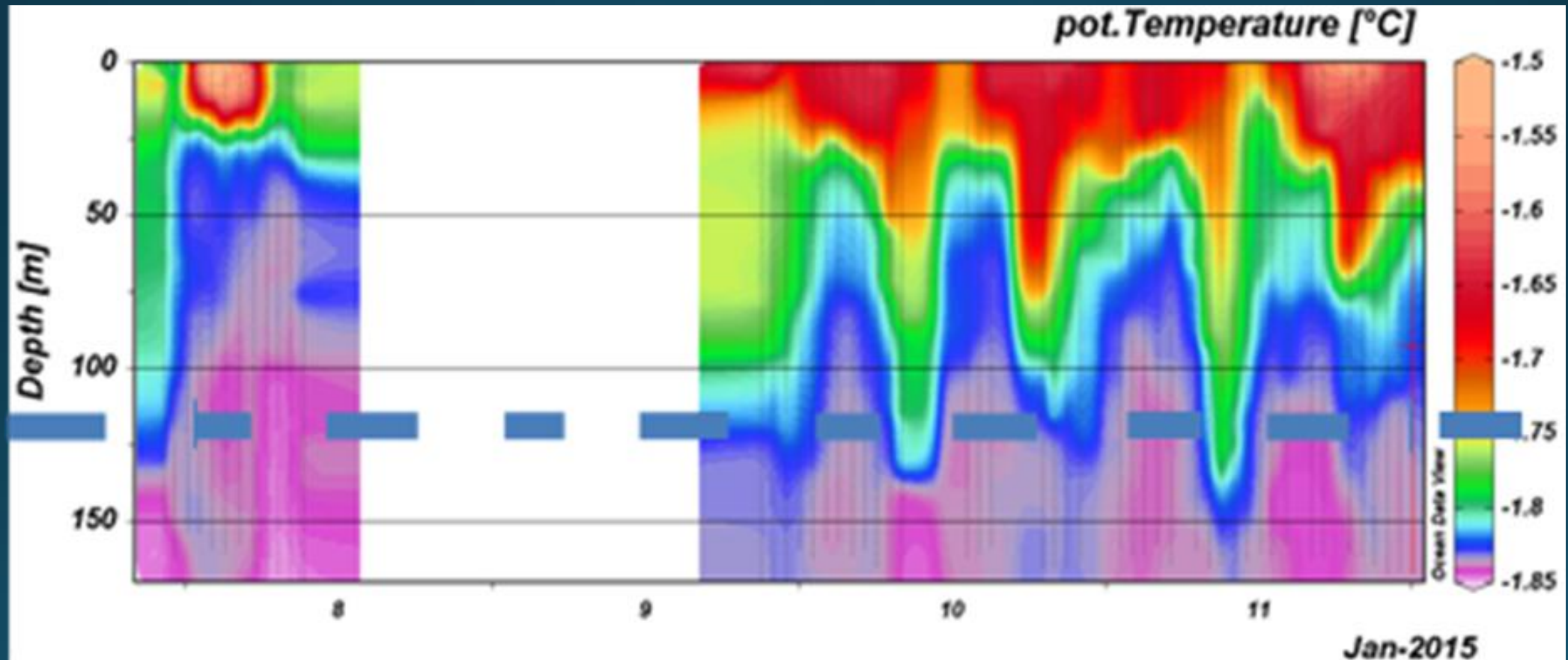
The ACC - fluctuations of the inflow



The ACC - fluctuations of the inflow



The outflow from under the shelf



Operational challenges



DAVIS Ship: DSHIP MapViewer [DSHIP Admin]

Program: help

Current System Values

System Position

Heading: 177.682

Speed: 0.5 kn

Next Waypoint

WP Number: 0

Bearing: 274

Distance: 127.6 nm

Time to Go: 0 D 16:52:57

Map Filter

Lat: 0° 00' 00" N Lon: 0° 00' 00" E

User Settings

Projection: Mercator

Map Width: 4 m

Map Range Style: normal

Bathymetric Map: no selection

Current Posidonia Transponder Values

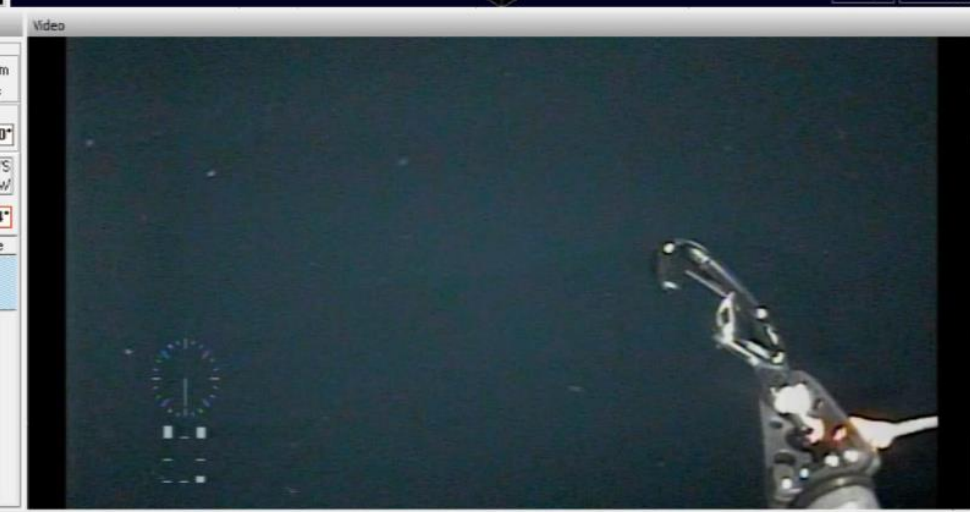
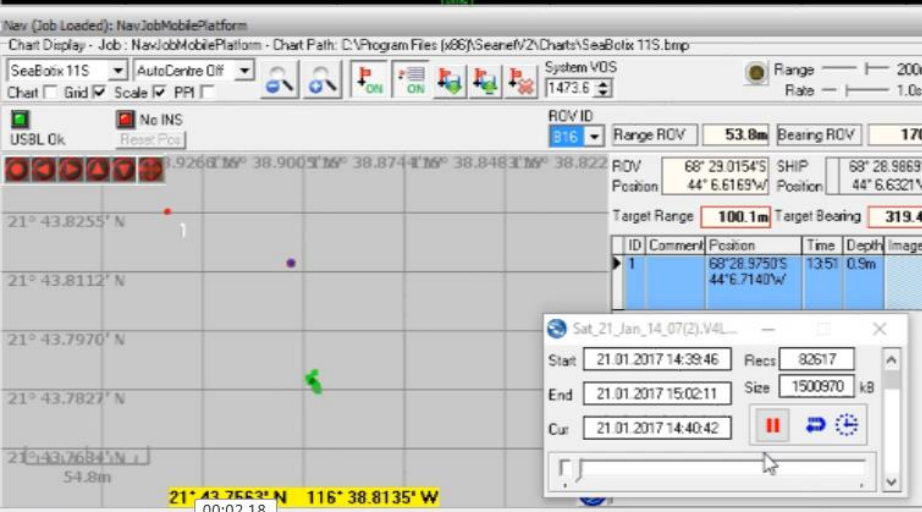
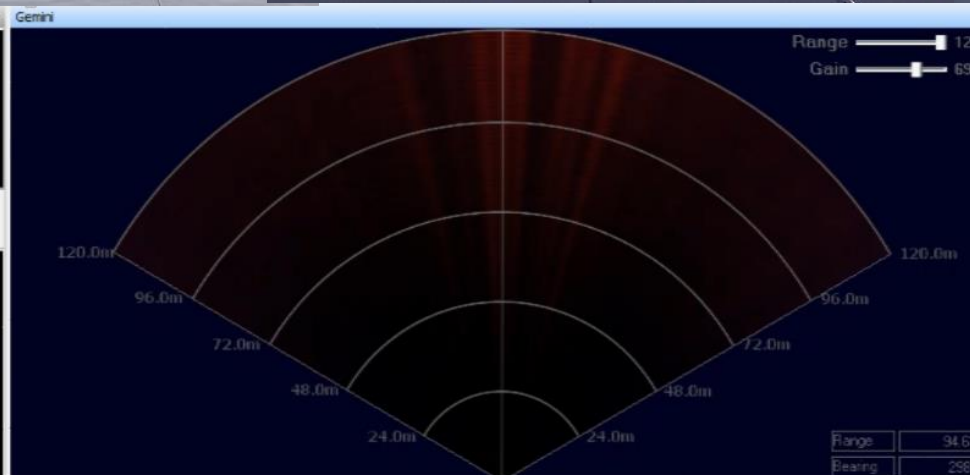
Position

Heading: 177.682

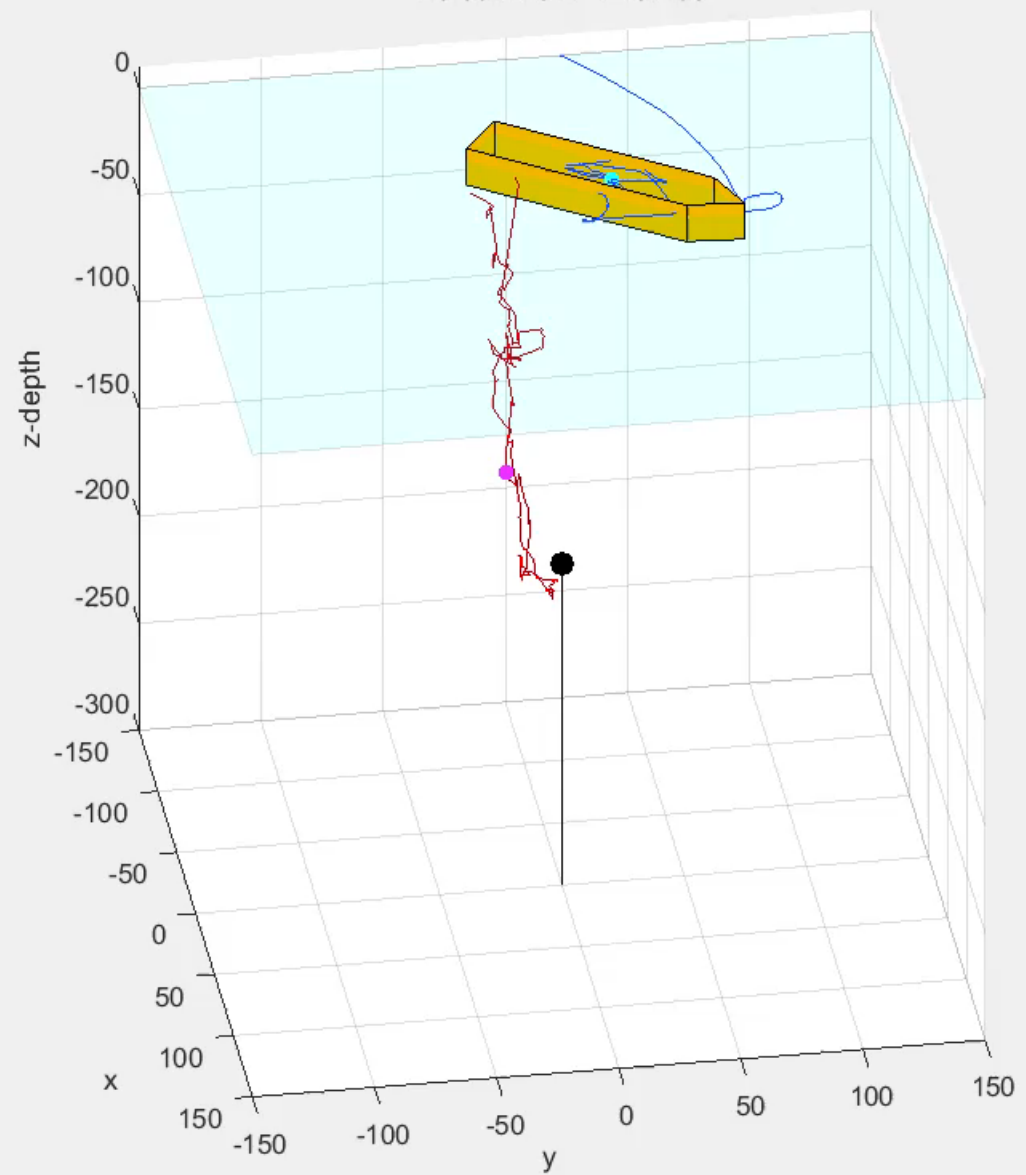
Speed: 0.5 kn

21:52:00	<u>on ground/max depth</u>	Aufnahme Mooring AWI-232
21:52:01	<u>in the water</u>	Hydrophon
21:52:02	<u>action</u>	2mal ausgelöst
21:53:00	<u>action</u>	3mal ausgelöst
21:54:00	<u>action</u>	2ter Auslöser 1mal ausgelöst
21:55:00	<u>action</u>	2ter Auslöser 3mal ausgelöst
21:57:00	<u>on deck</u>	Hydrophon
23:07:00	<u>information</u>	Suche eingestellt, Posidonia v
00:34:00	<u>information</u>	Posidonia aus dem Brunnens
03:46:00	<u>on deck</u>	Auftriebskugel
03:50:00	<u>on deck</u>	Strömungsmesser, Posidonia
04:56:00	<u>on deck</u>	5 x Benthos, 1 x SM
05:08:59	<u>on deck</u>	SonoVault
05:27:00	<u>on deck</u>	3 x Benthos, RCM
05:54:00	<u>on deck</u>	<u>Microcat</u> , RCM, Doppelreleas
05:54:59	<u>on ground/max depth</u>	
06:16:59	<u>on ground/max depth</u>	ARGOS Sender der Topeinheit





26-Jan-2017 12:37:05

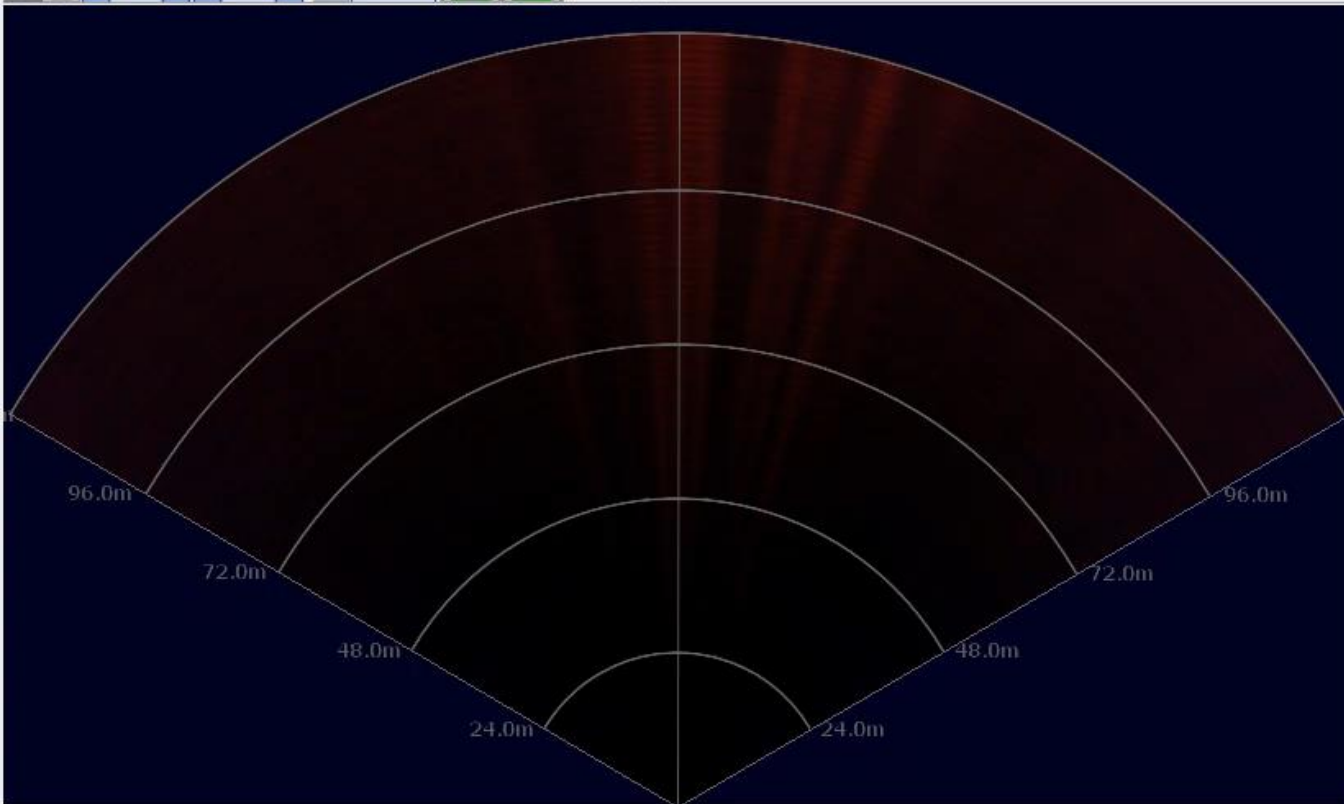


vLBV

The screenshot displays the game's HUD with the following information:

- THRUSTERS:**
 - HORIZONTAL: 2
 - VERTICAL: 10
 - Values: -397, 441, 1103, 1103, 441, -397
- LIGHTS:**
 - 6 lights are shown, with lights 1 and 5 highlighted in yellow.
 - EXT TEMP: 1.3°C
 - INT TEMP: 16.5°C
 - ACC.: 0
- DEPTH:** 230.2m
- ALTITUDE:** N/A
- PITCH:** N/A
- ROLL:** N/A
- Time:** A timeline at the bottom shows the time from 14:58 to 15:02.
- Other UI Elements:**
 - A "Pause" button and a timer "00:00:00" are in the top right.
 - A "Bereich auswählen" (Select Area) button is in the top right.
 - A compass rose is visible on the right side.
 - A "200 metres" scale bar is at the bottom right.

Gemini



Jan-2017 15:33:09	Aif N/A	Lan	Com N/A	Rat N/A
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 Pause
  00:00:00
  Bereich auswählen
  Audio
  Mauszeiger aufzeichnen

The screenshot shows the SeaBotix 115 software interface. A data recording window is open, displaying the following information:

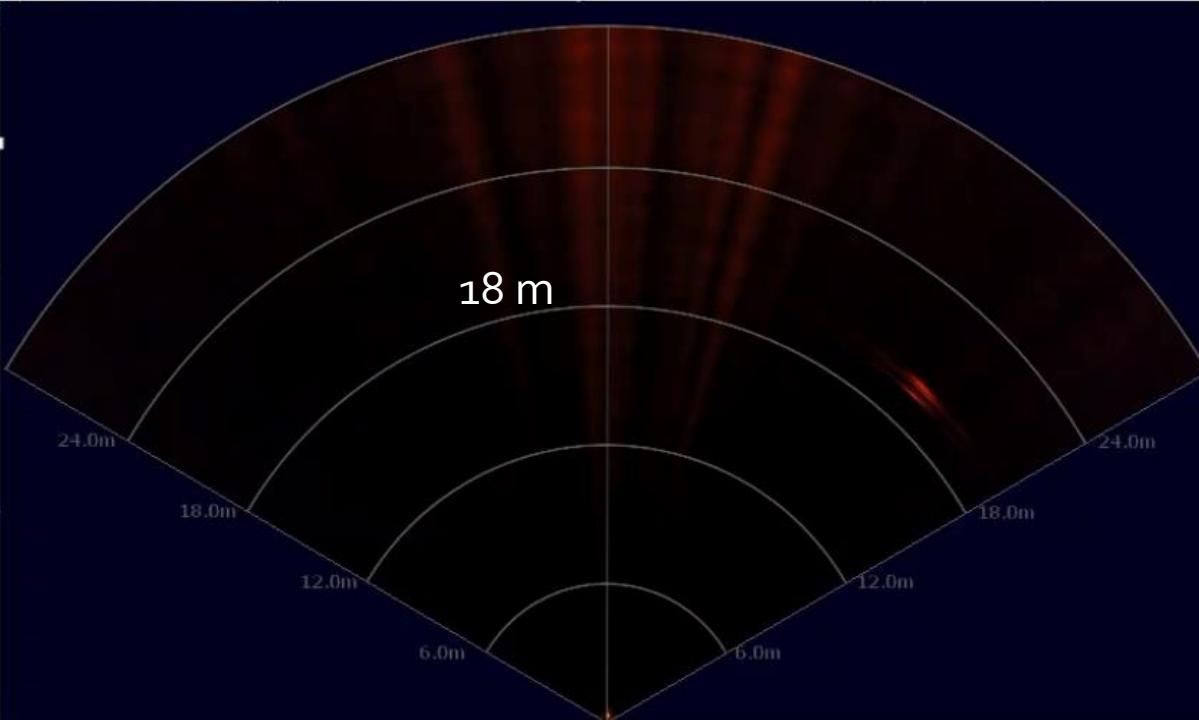
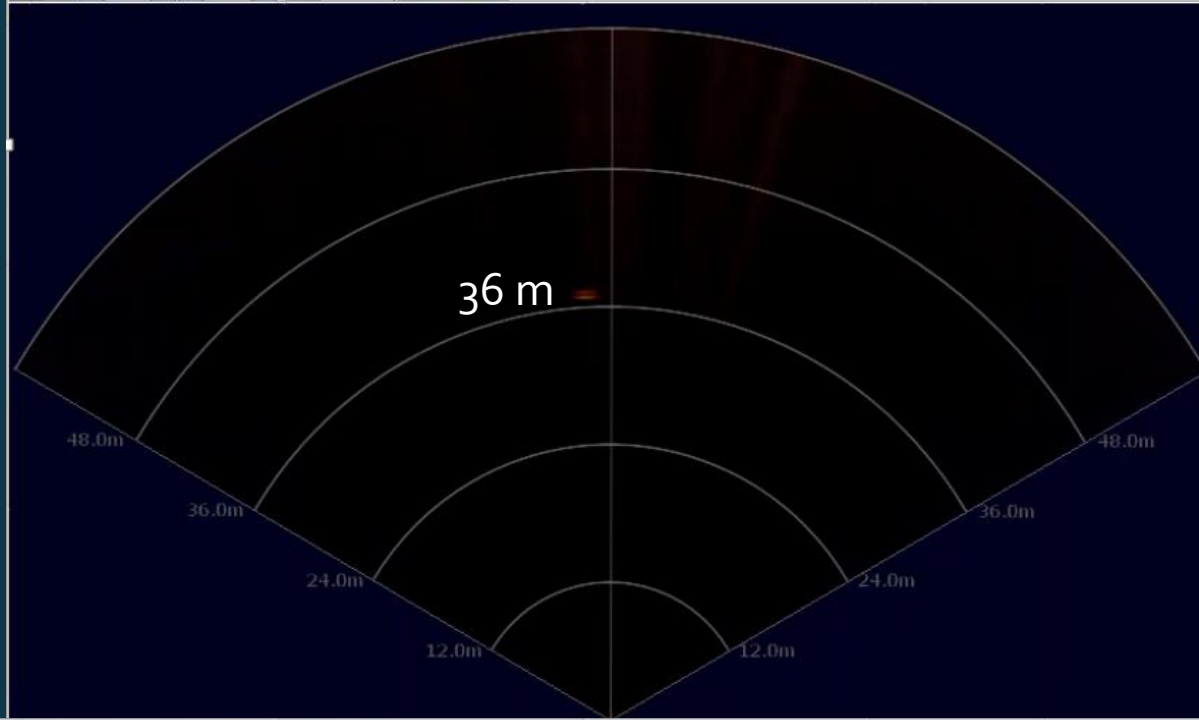
- Start:** 21.01.2017 14:39:46
- End:** 21.01.2017 15:02:11
- Cur:** 21.01.2017 14:40:52
- Recs:** 82617
- Size:** 1500970 kB

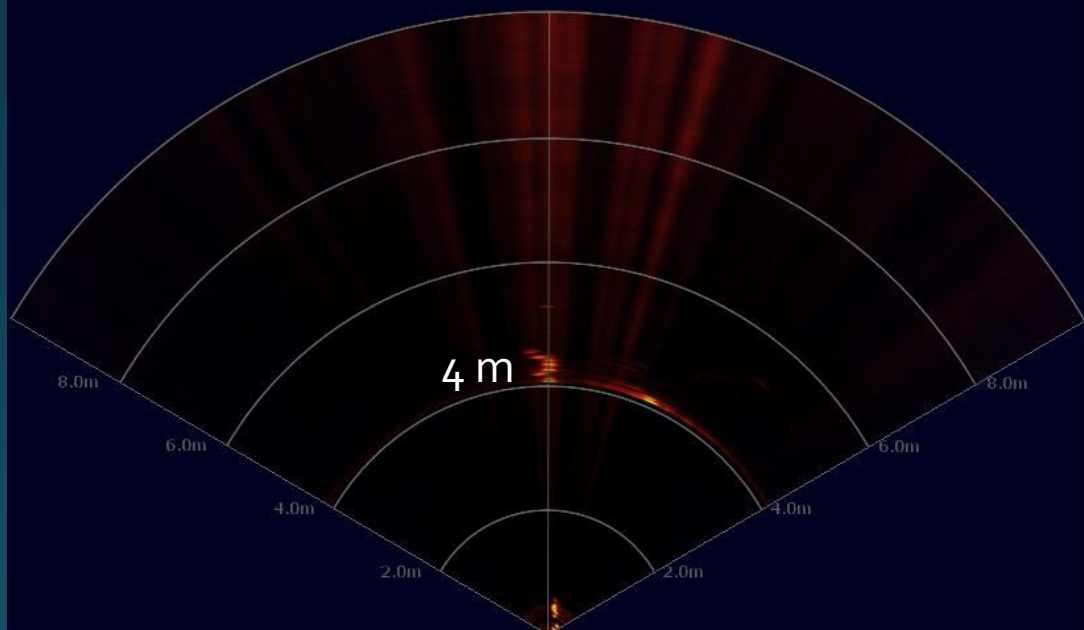
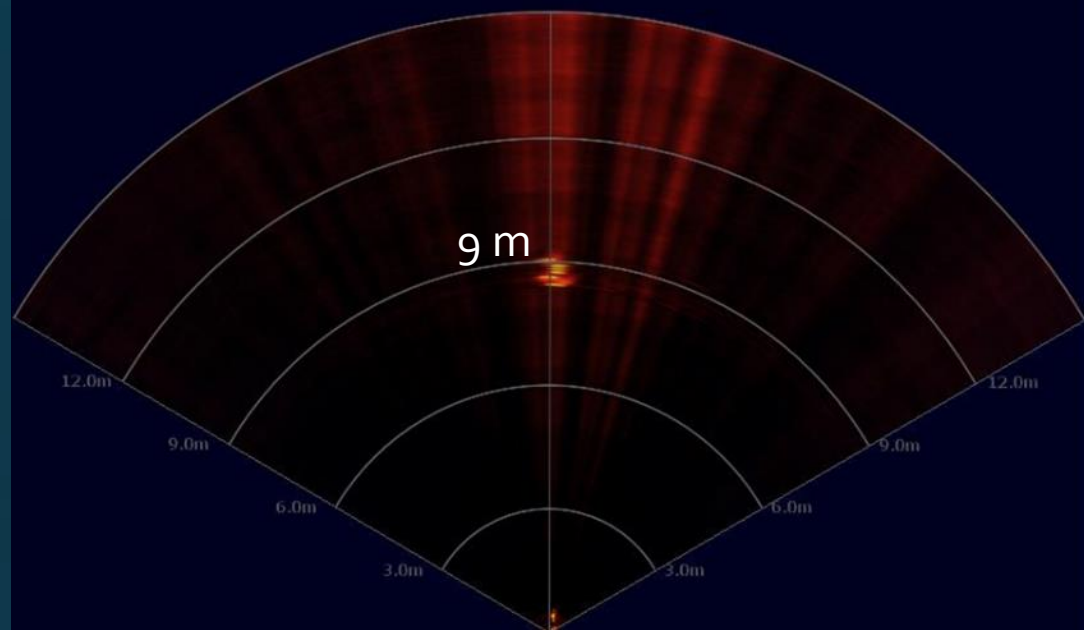
The background shows a map with coordinates and a data table. The table has columns for Latitude (N), Longitude (W), and Depth (m). The current coordinates displayed are 21° 43.8088' N and 116° 38.9512' W. The depth is 0m.

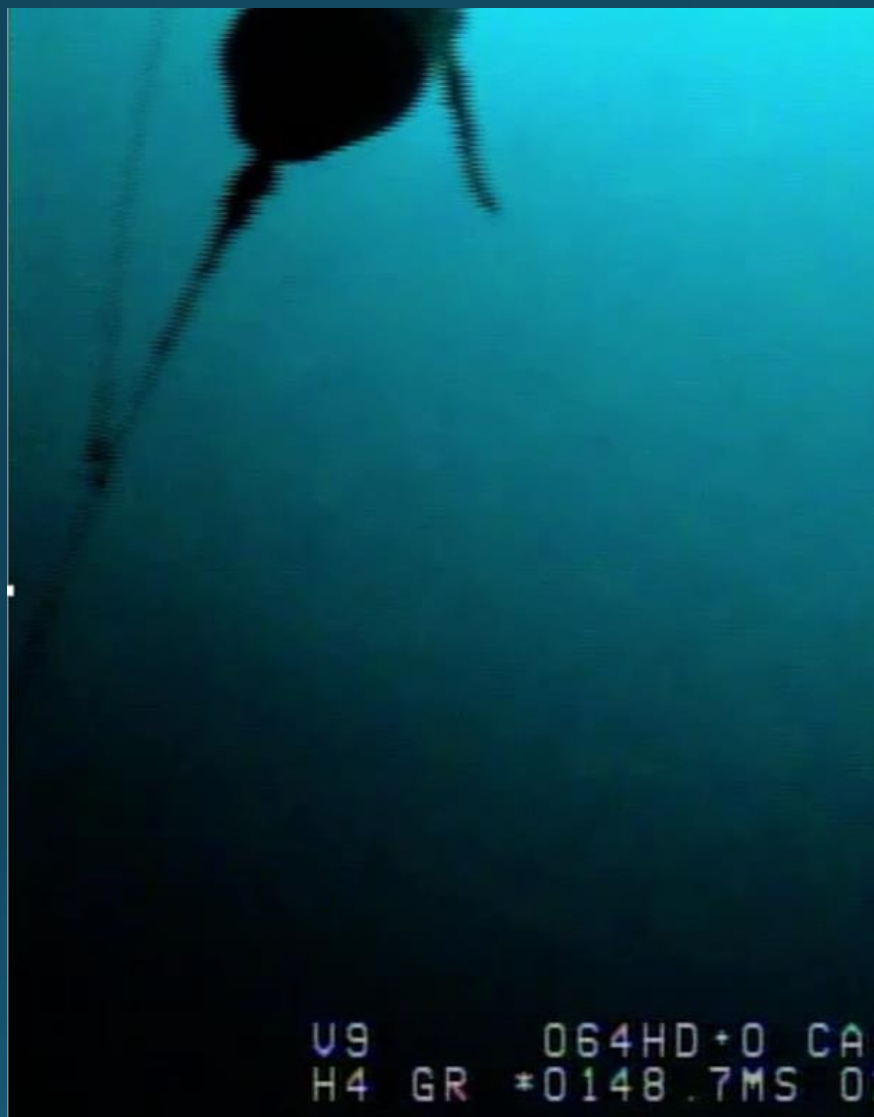
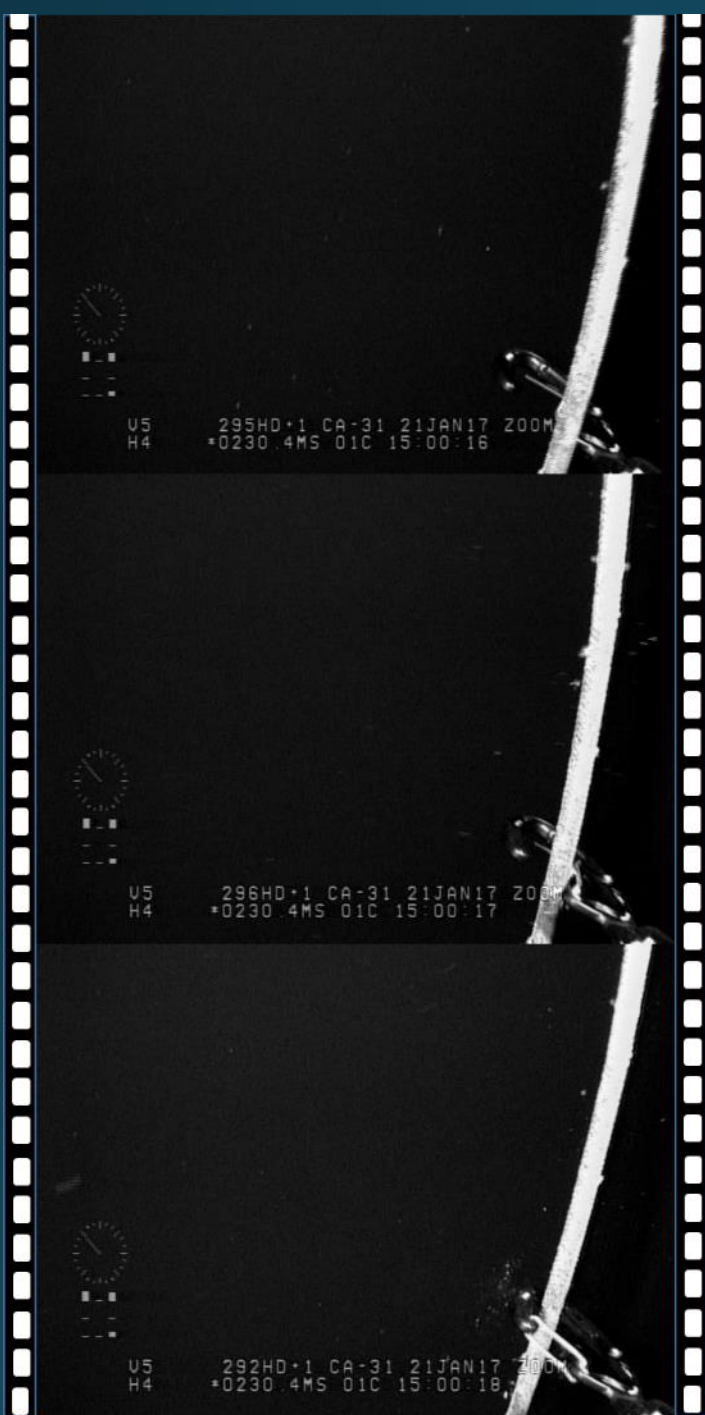
Video



UD 077HD+2 CA-49 21JAN17 BOW
H2 *0230.2MS 01C 14:40:47







Polarstern Expedition PS 117:

16 Dec 2018 – Feb 2019

Ancillary proposals due
30 September 2017 at
[https://www.awi.de/
ueber-uns/logistik/nutzerantrag.html](https://www.awi.de/ueber-uns/logistik/nutzerantrag.html)

