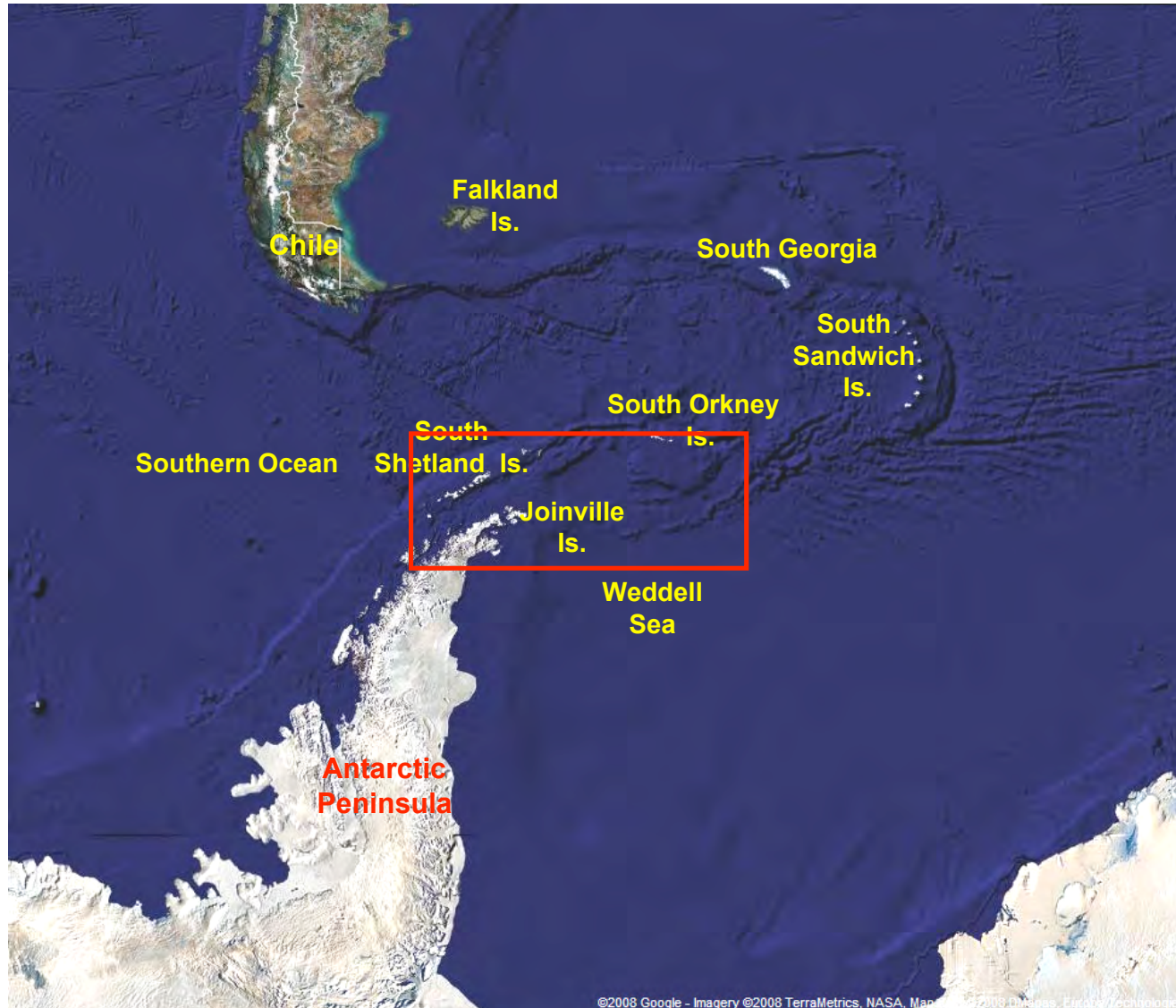




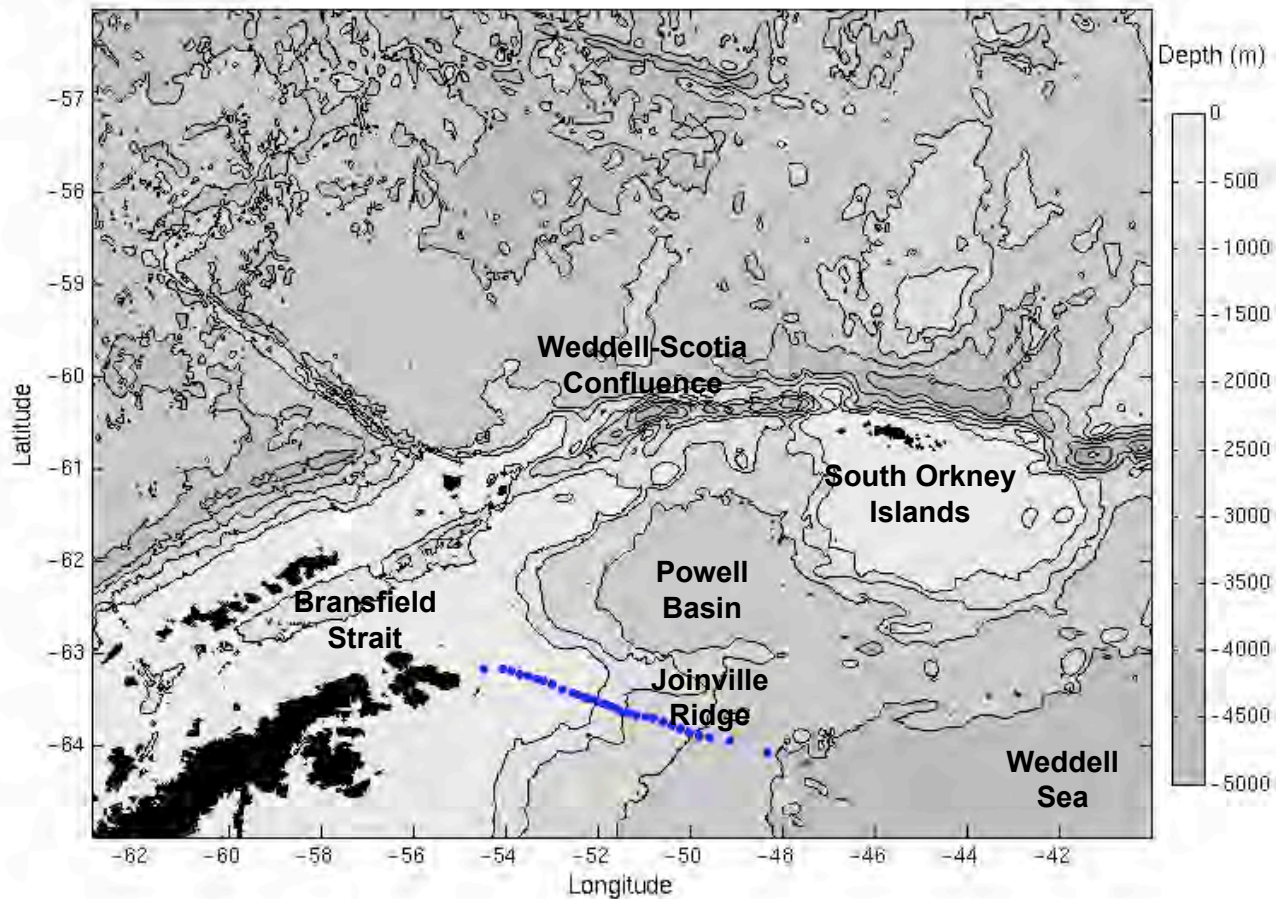
Abigail Nye (UEA)
Karen Heywood (UEA)
Andrew Thompson (U. Camb.)
Sally Thorpe (BAS)
Angelika Renner (BAS)



Antarctic Peninsula



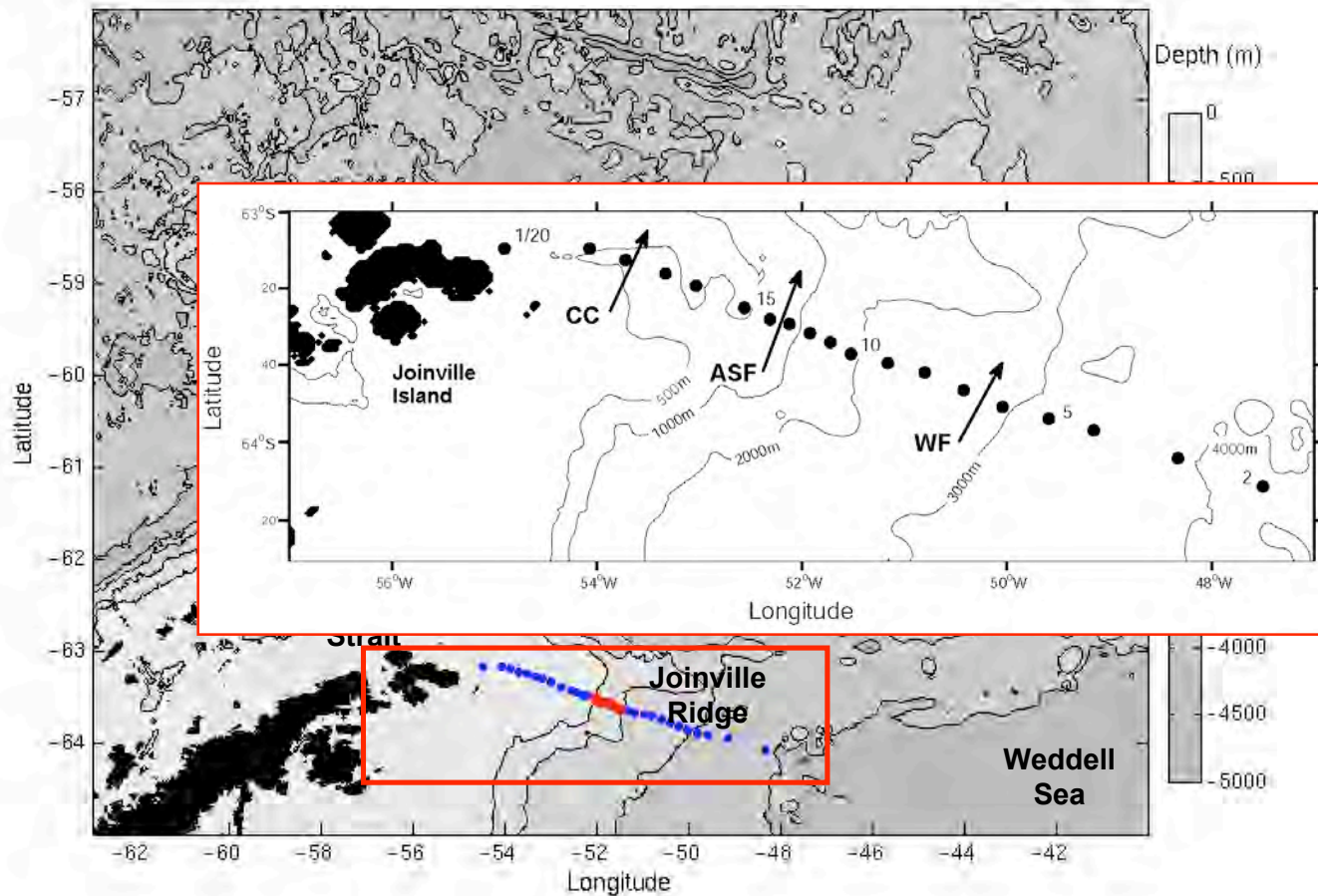
Deployment positions (Feb 2007)



- 40 surface drifters drogued at 15m

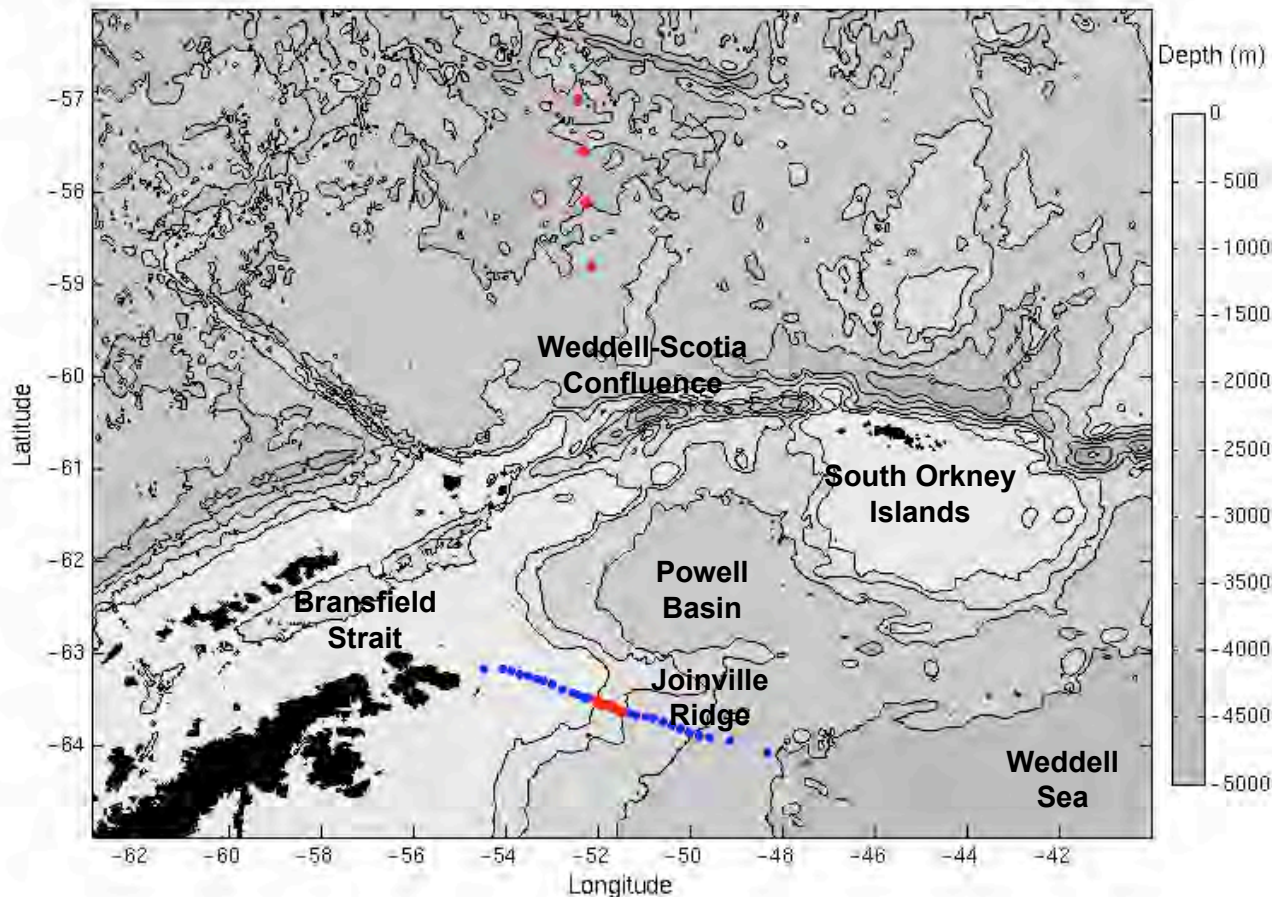


Deployment positions (Feb 2007)



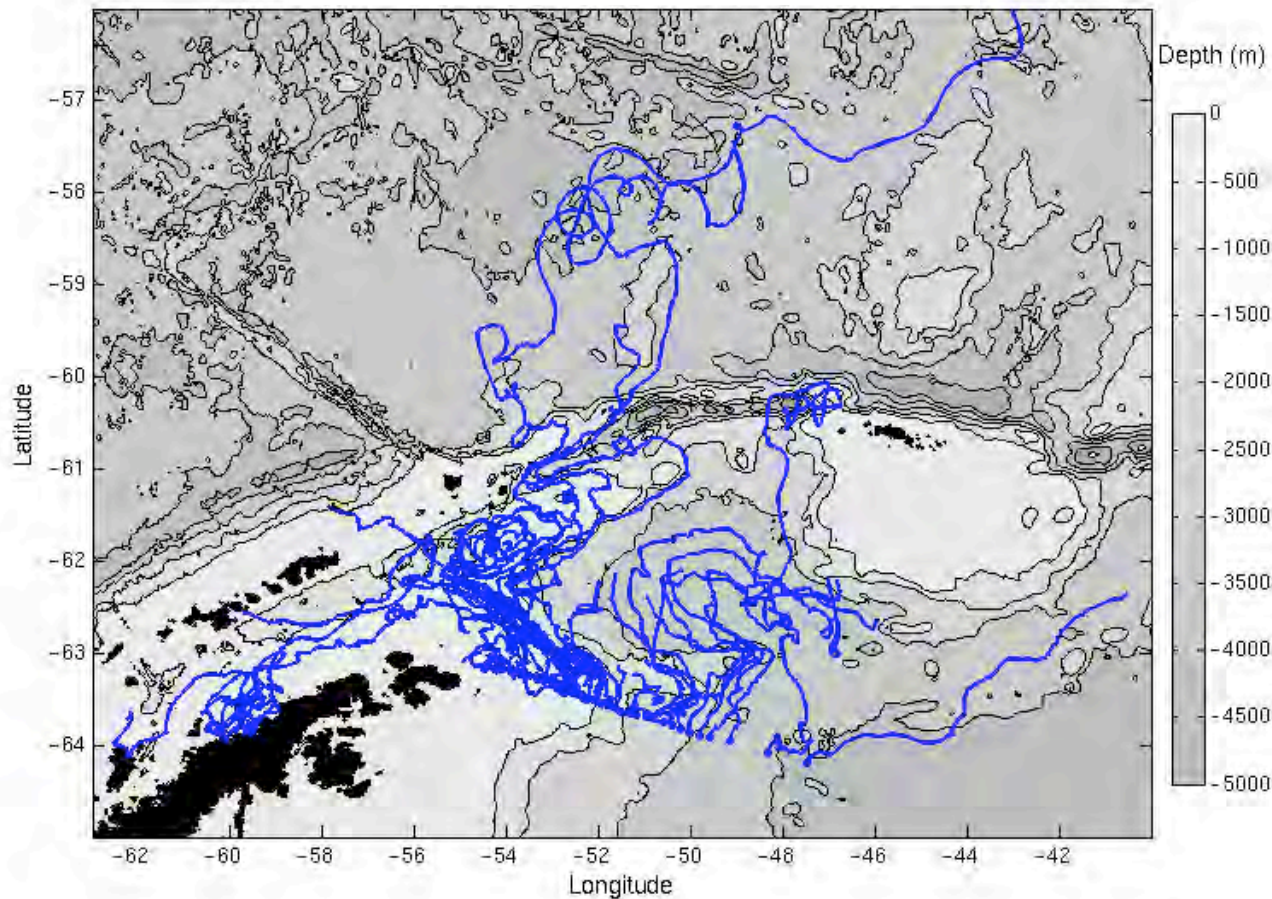
- 40 surface drifters drogued at 15m
- 4 Argo floats in Weddell Sea – parking depth of 1000m

Deployment positions (Feb 2007)



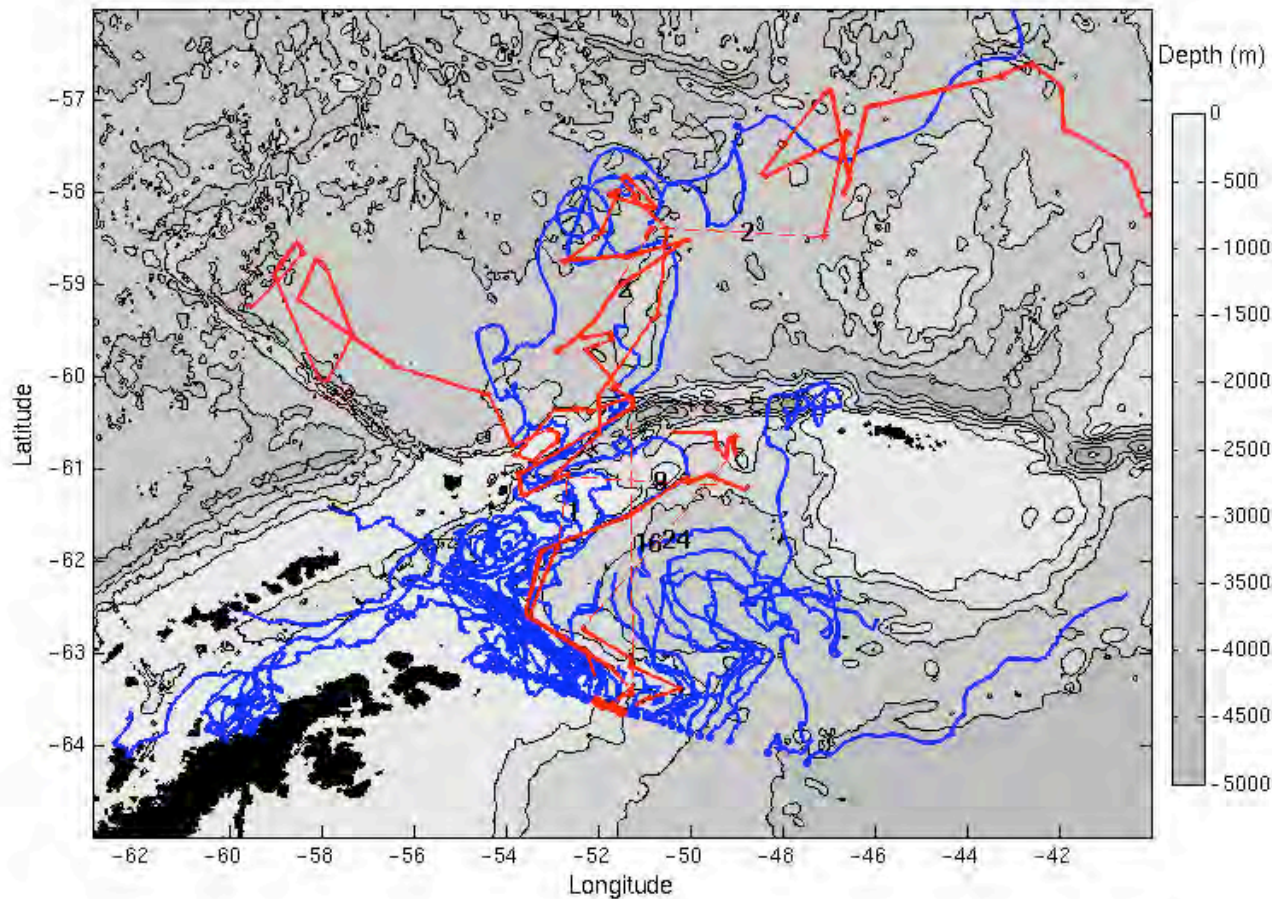
- 40 surface drifters drogued at 15m
- 4 Argo floats in Weddell Sea – parking depth of 1000m
- 4 Argo floats in Drake Passage

Argo and drifter trajectories

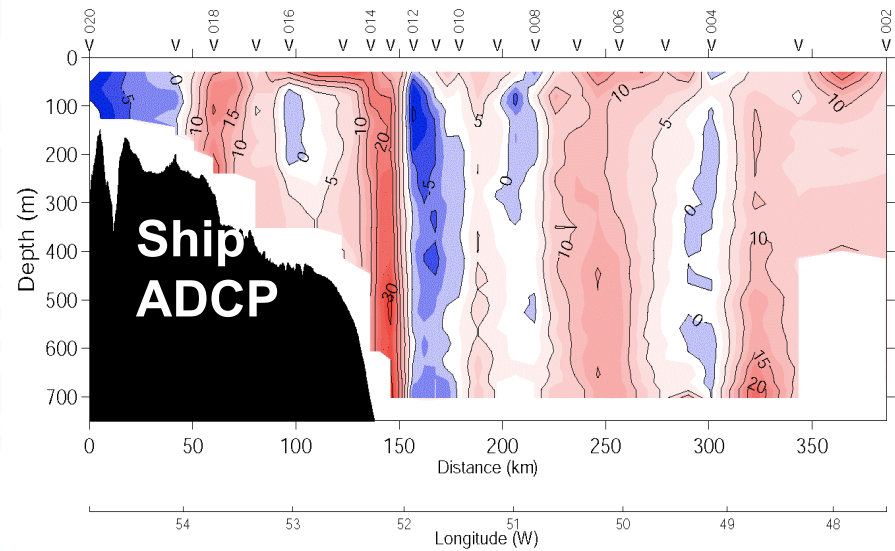
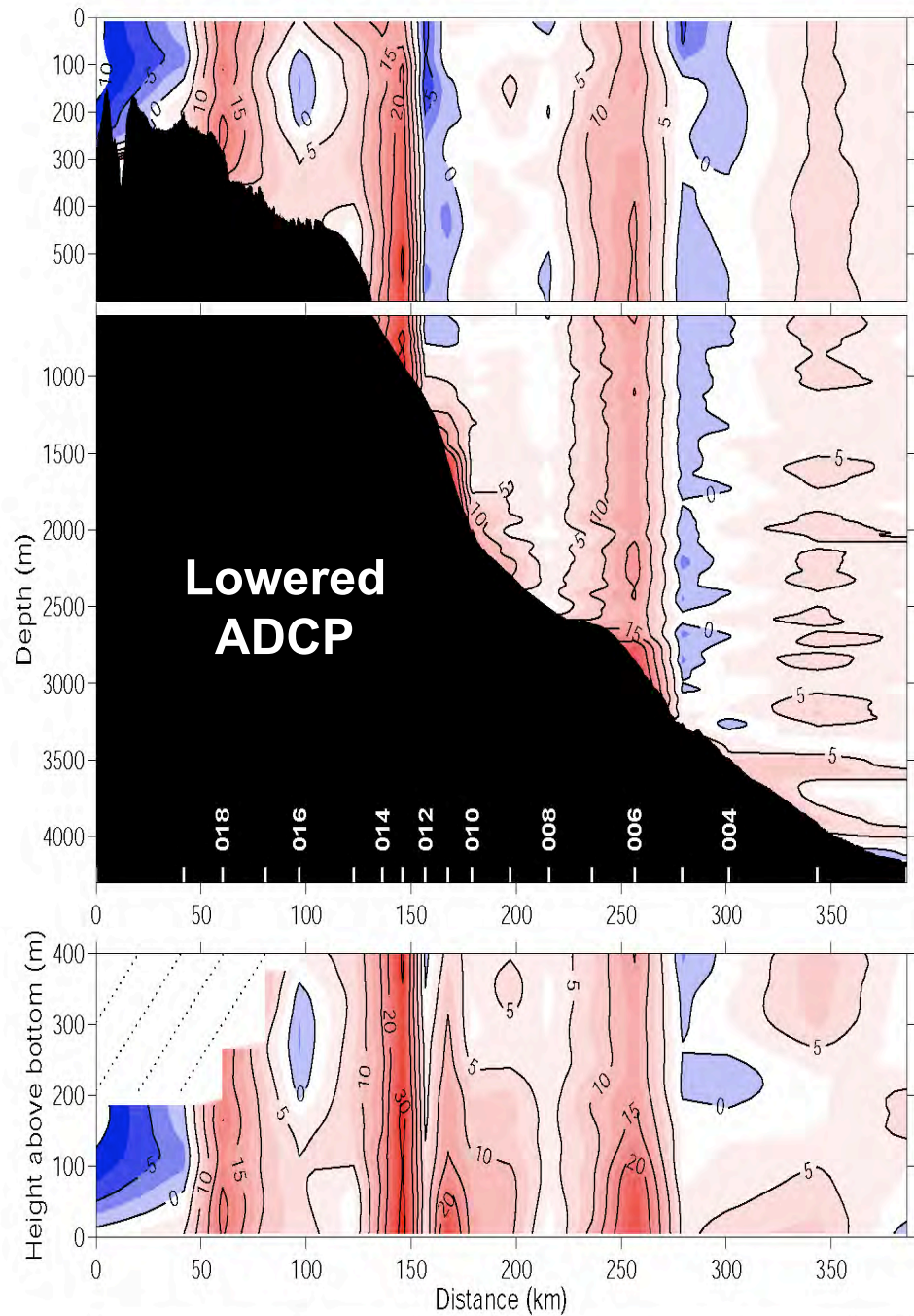


- 40 surface drifters drogued at 15m
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- 4 Argo floats in Drake Passage

Argo and drifter trajectories

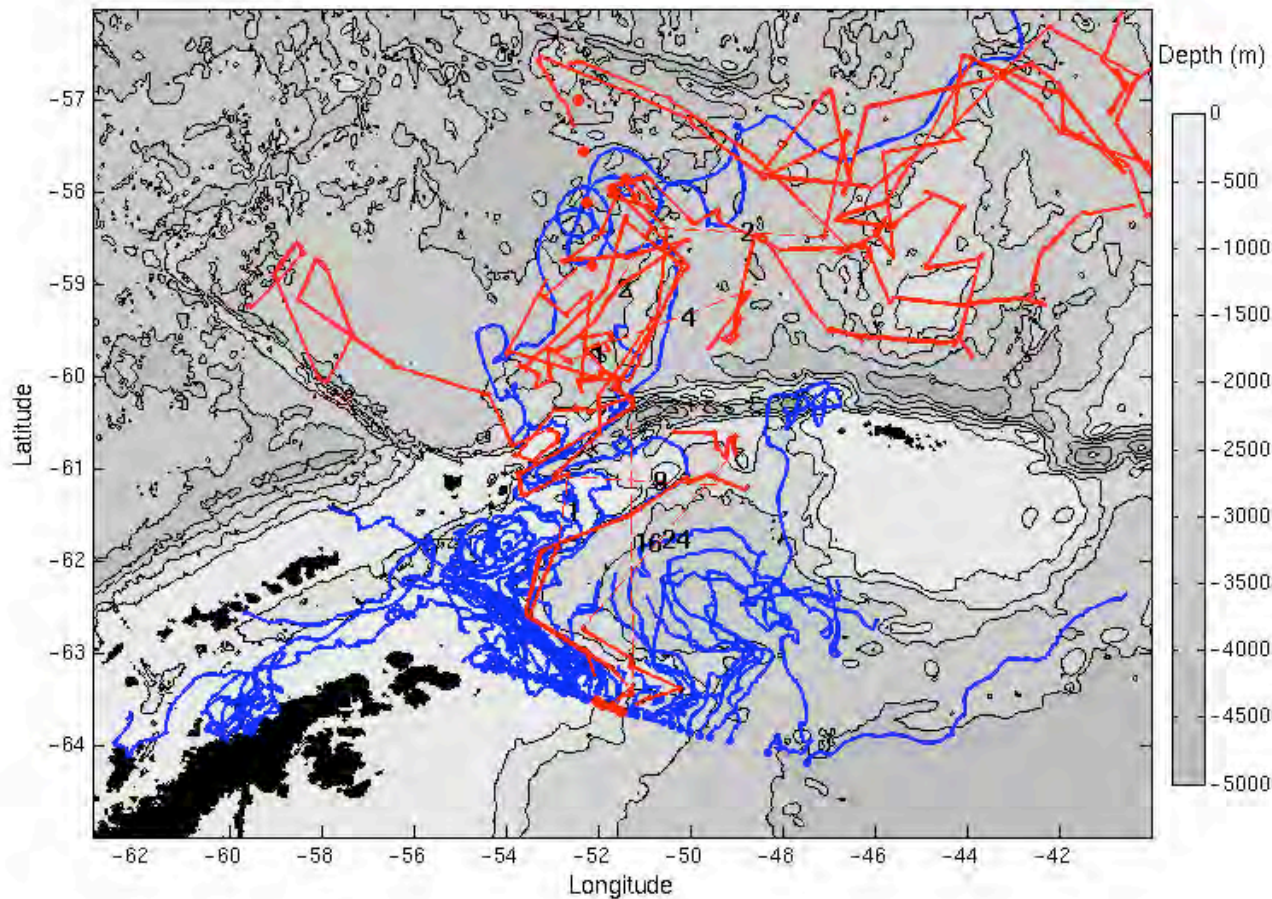


- 40 surface drifters drogued at 15m
- 4 Argo floats in Weddell Sea – parking depth of 1000m
- 4 Argo floats in Drake Passage



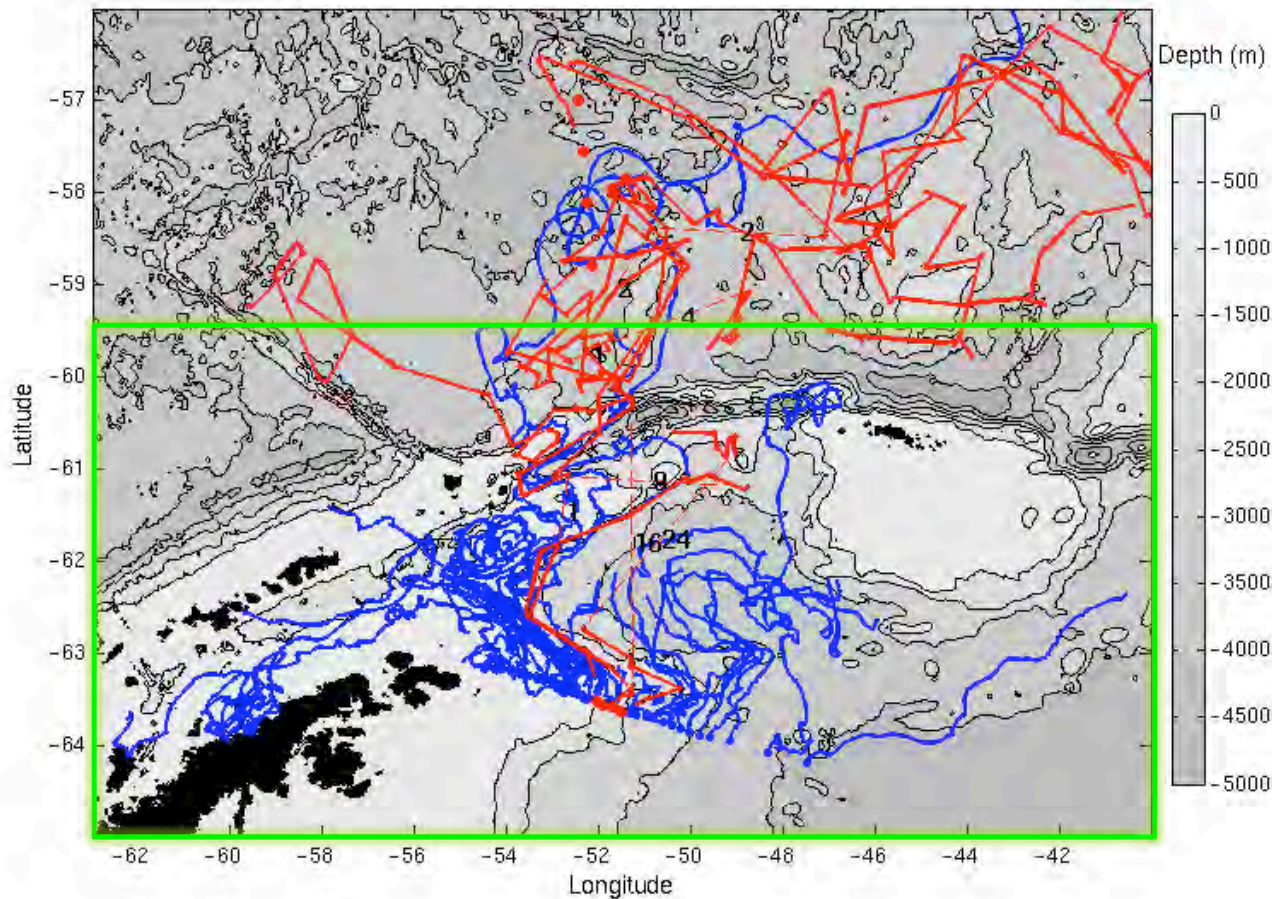
- Argo floats faster than drifters in reaching ridge
- Antarctic Slope Front stronger with depth

Argo and drifter trajectories



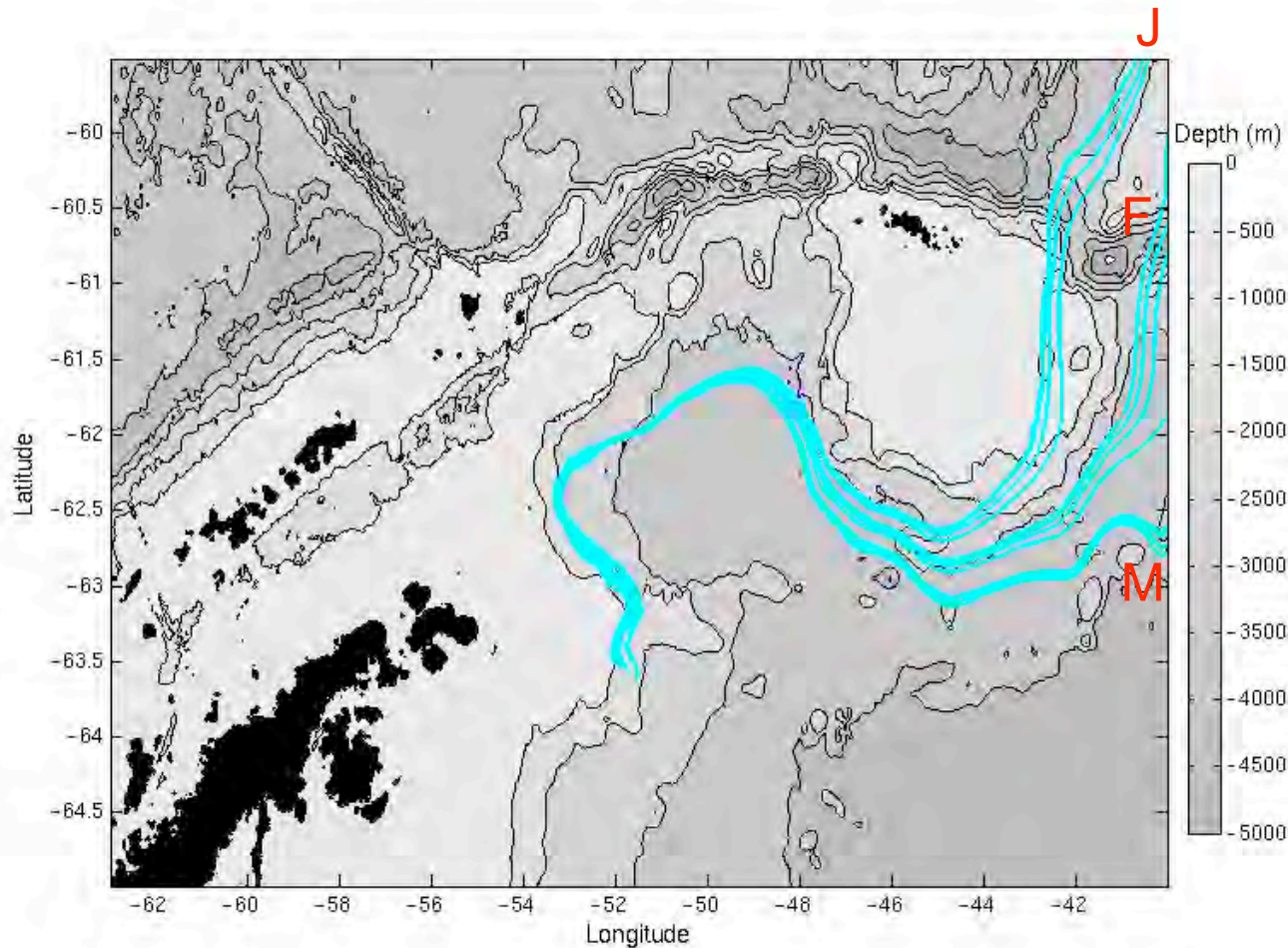
- 40 surface drifters drogued at 15m
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Argo and drifter trajectories



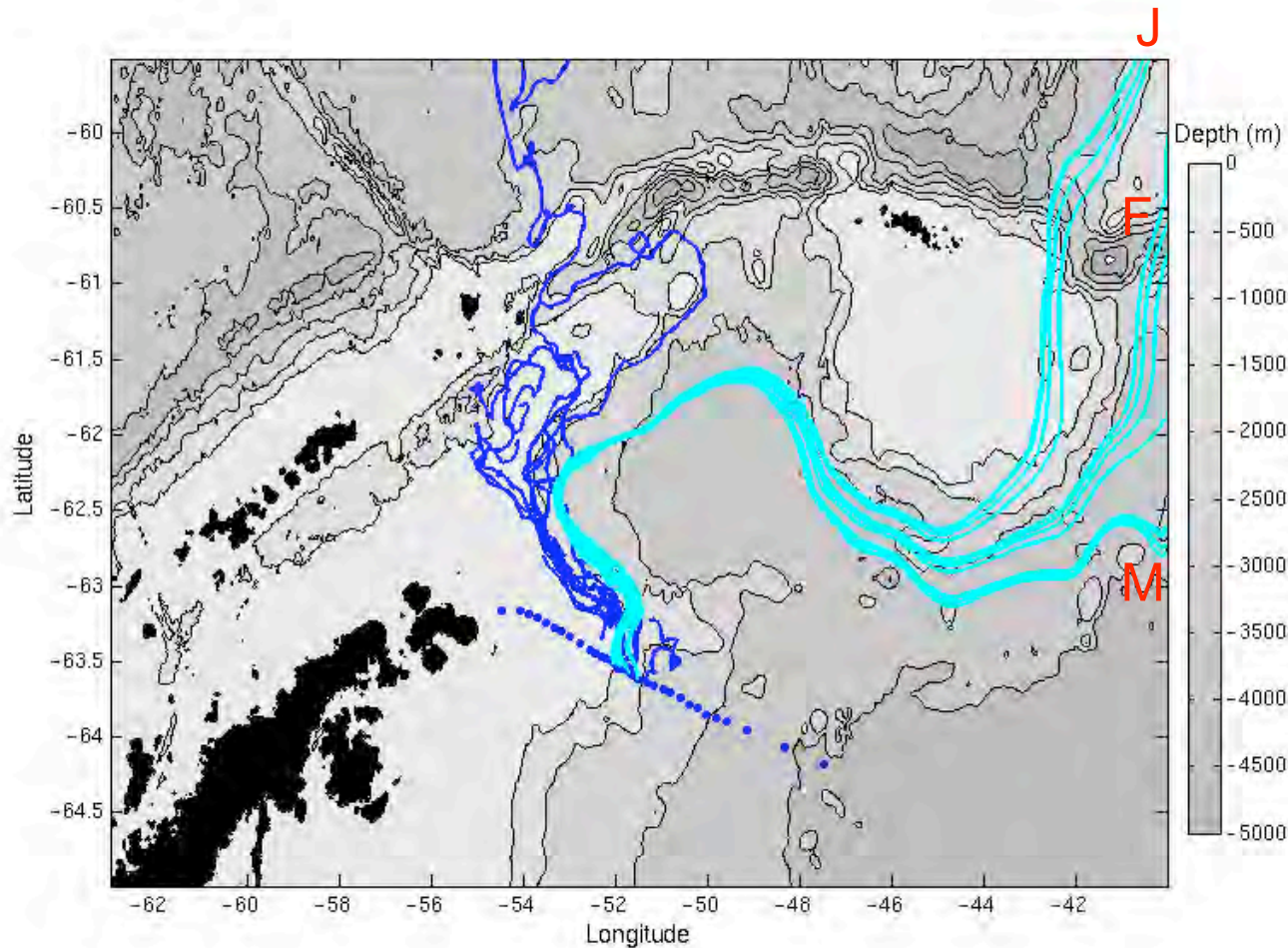
- 40 surface drifters drogued at 15m
- 4 Argo floats in Weddell Sea – parking depth of 1000m
- 4 Argo floats in Drake Passage

Numerical tracer trajectories at 14m



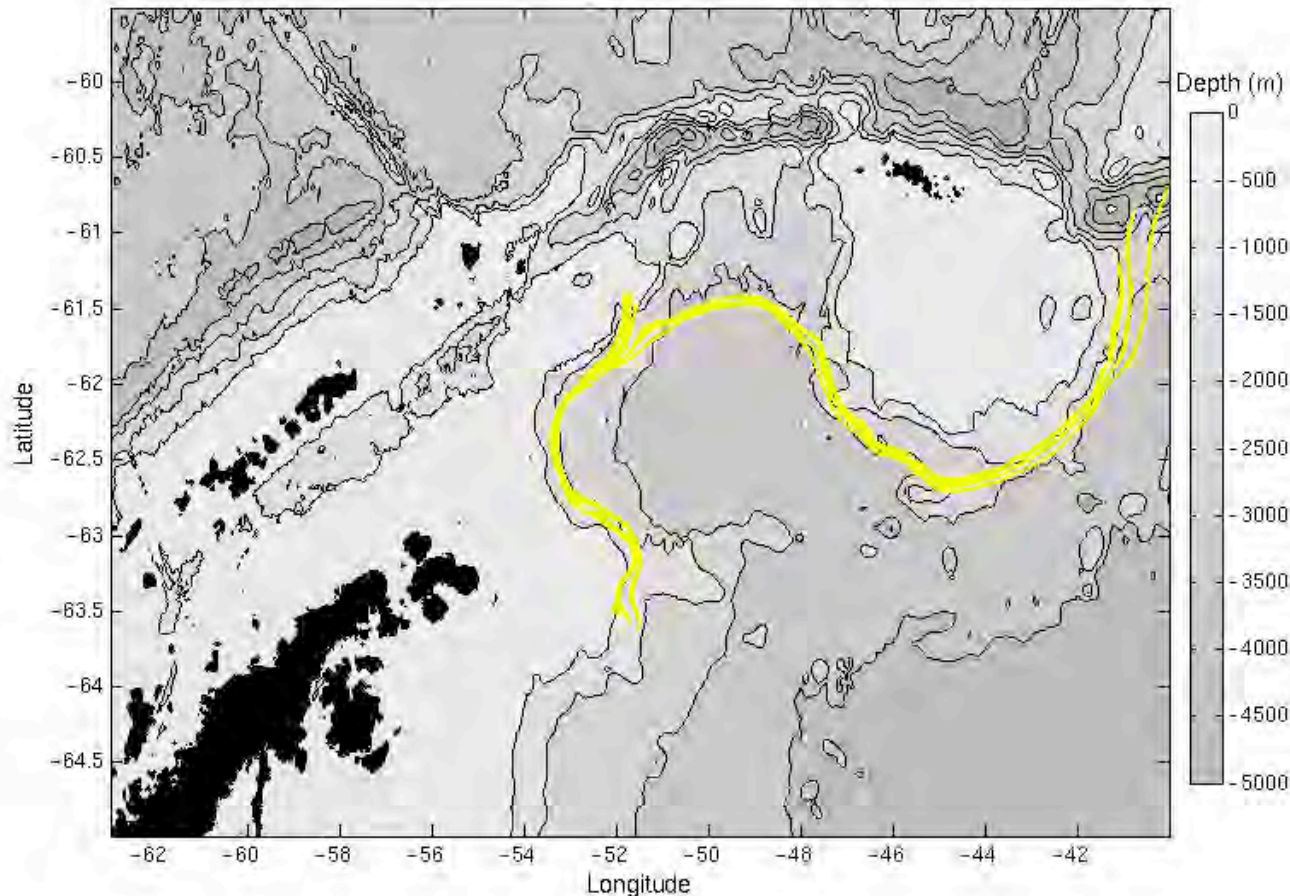
- OCCAM: $\frac{1}{4}^\circ$, 66 vertical levels
- Multiyear monthly mean velocity fields (1985-2004)
- 2° gridded Smith & Sandwell bathymetry

Numerical tracer trajectories at 14m



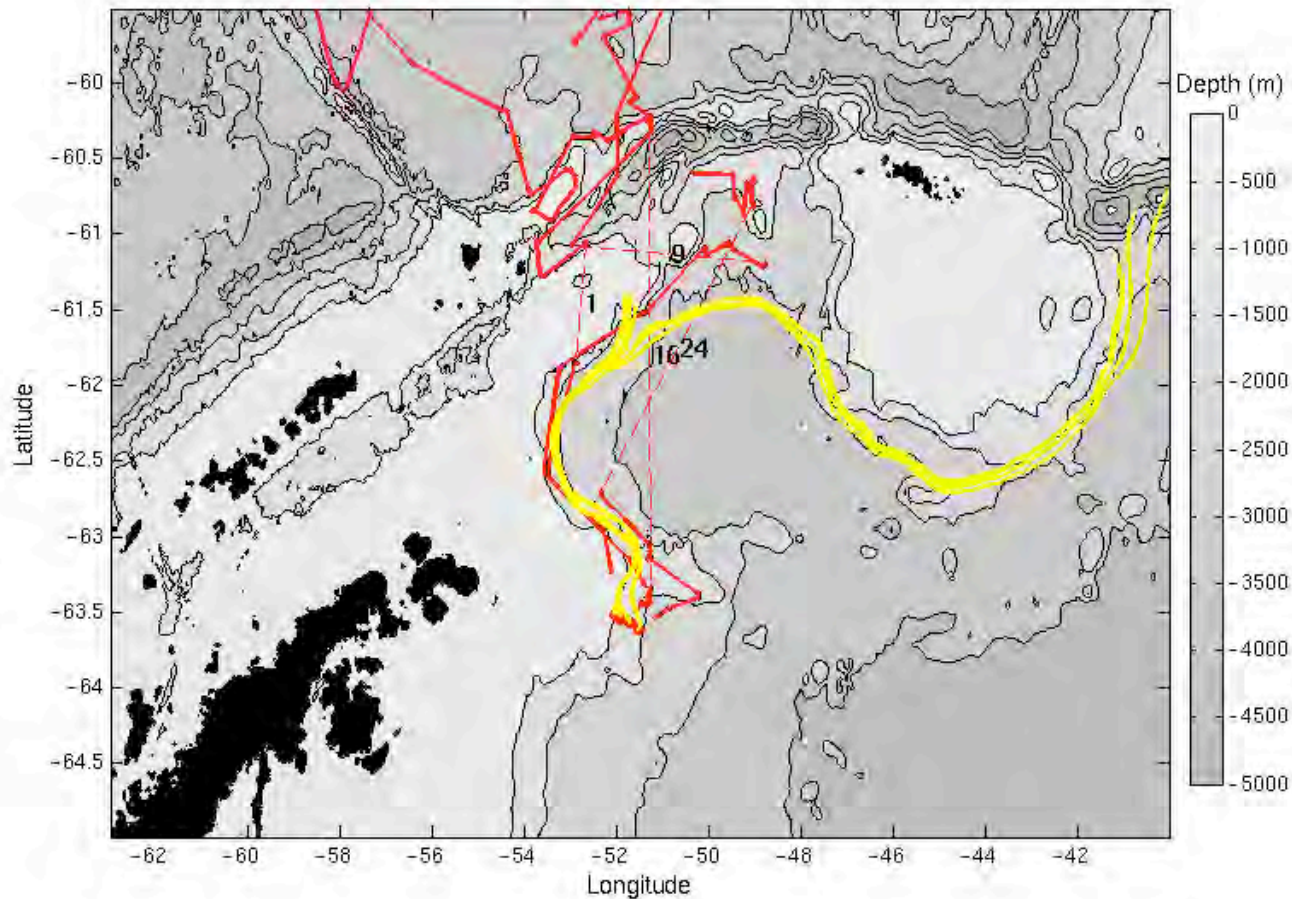
- OCCAM: $\frac{1}{4}^\circ$, 66 vertical levels
- Multiyear monthly mean velocity fields (1985-2004)
- 2° gridded Smith & Sandwell bathymetry

Numerical tracer trajectories at 931m



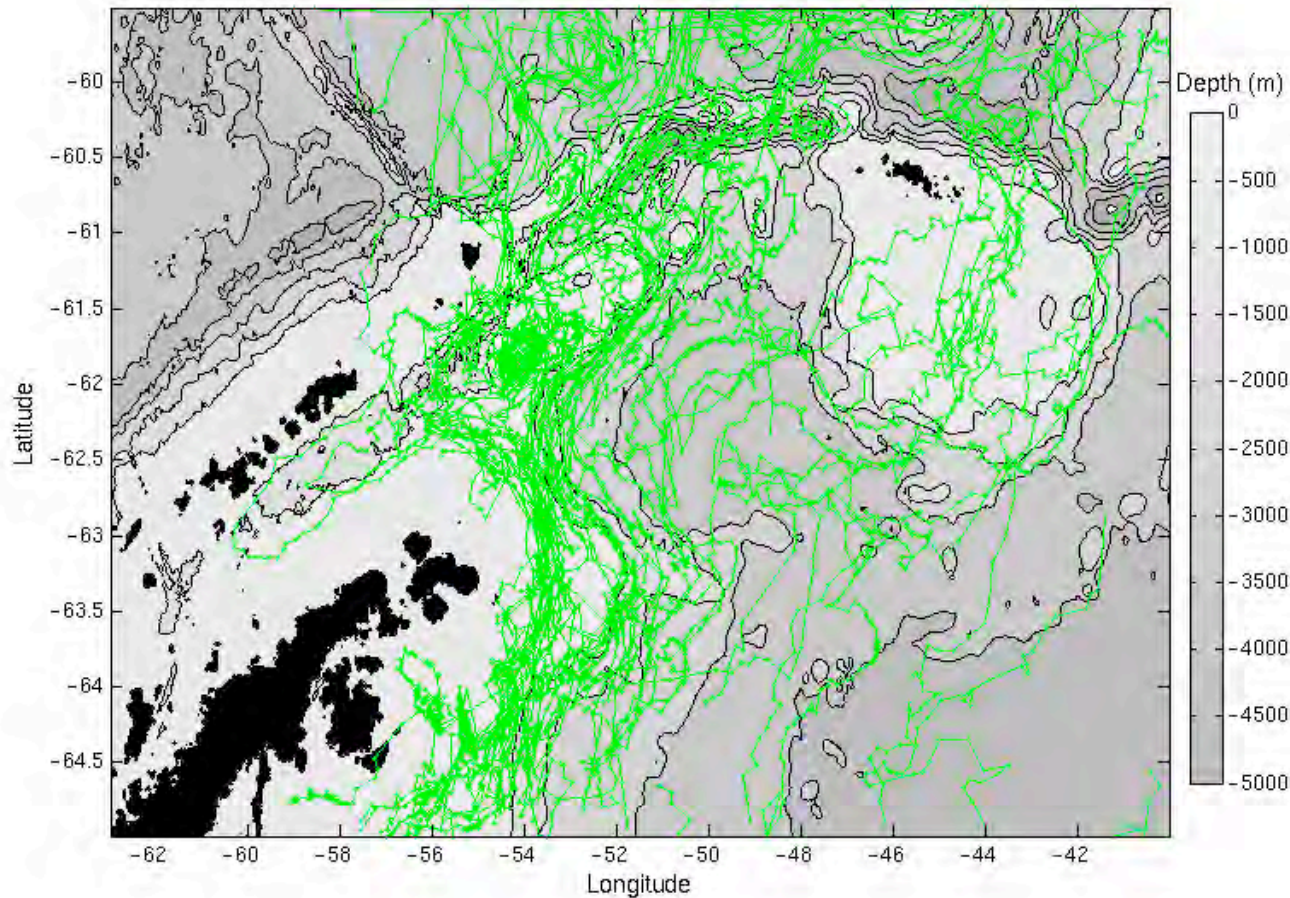
- OCCAM: $\frac{1}{4}^\circ$, 66 vertical levels
- Multiyear monthly mean velocity fields (1985-2004)
- 2° gridded Smith & Sandwell bathymetry

Numerical tracer trajectories at 931m



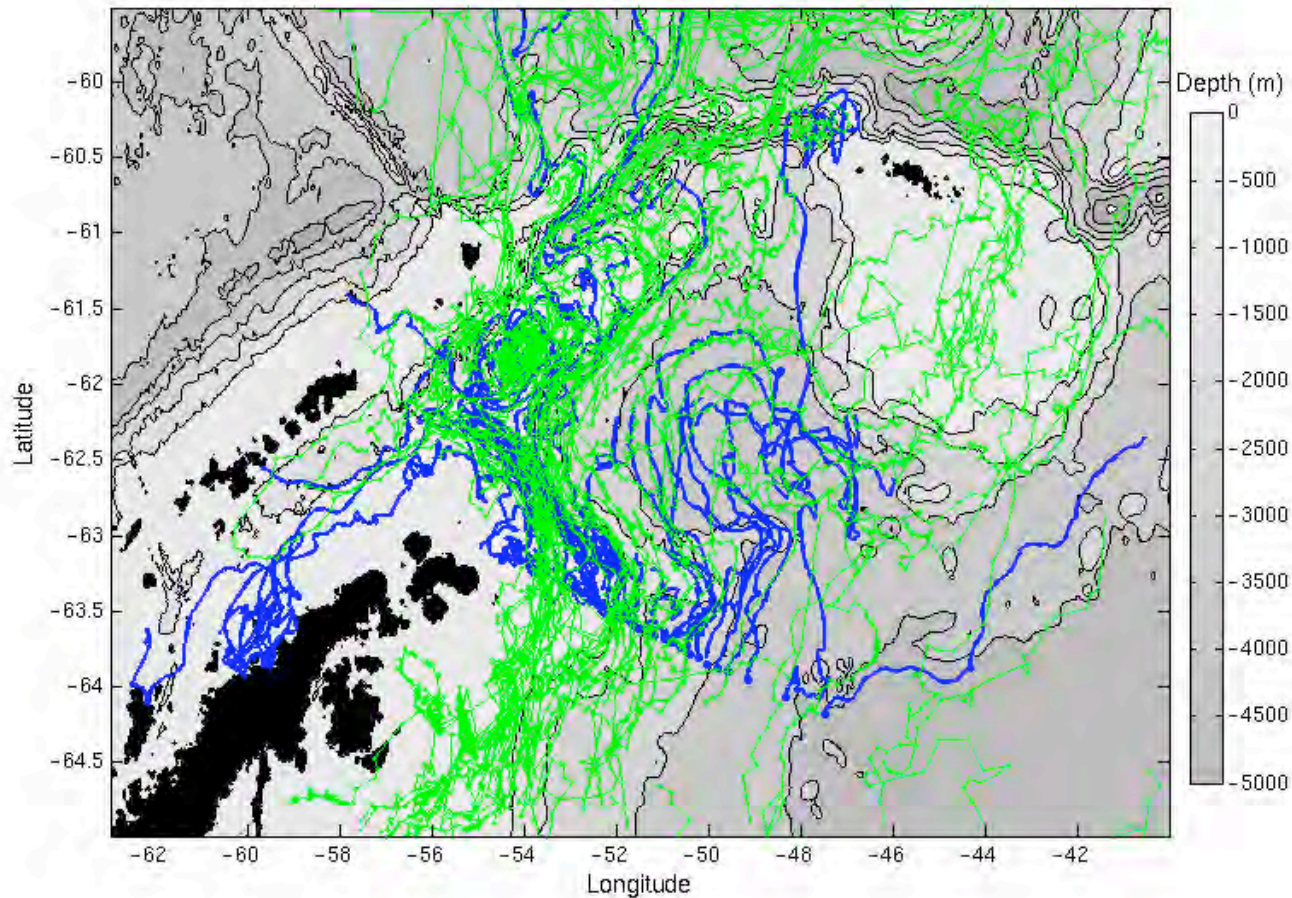
- OCCAM: $\frac{1}{4}^\circ$, 66 vertical levels
- Multiyear monthly mean velocity fields (1985-2004)
- 2° gridded Smith & Sandwell bathymetry

Iceberg tracks



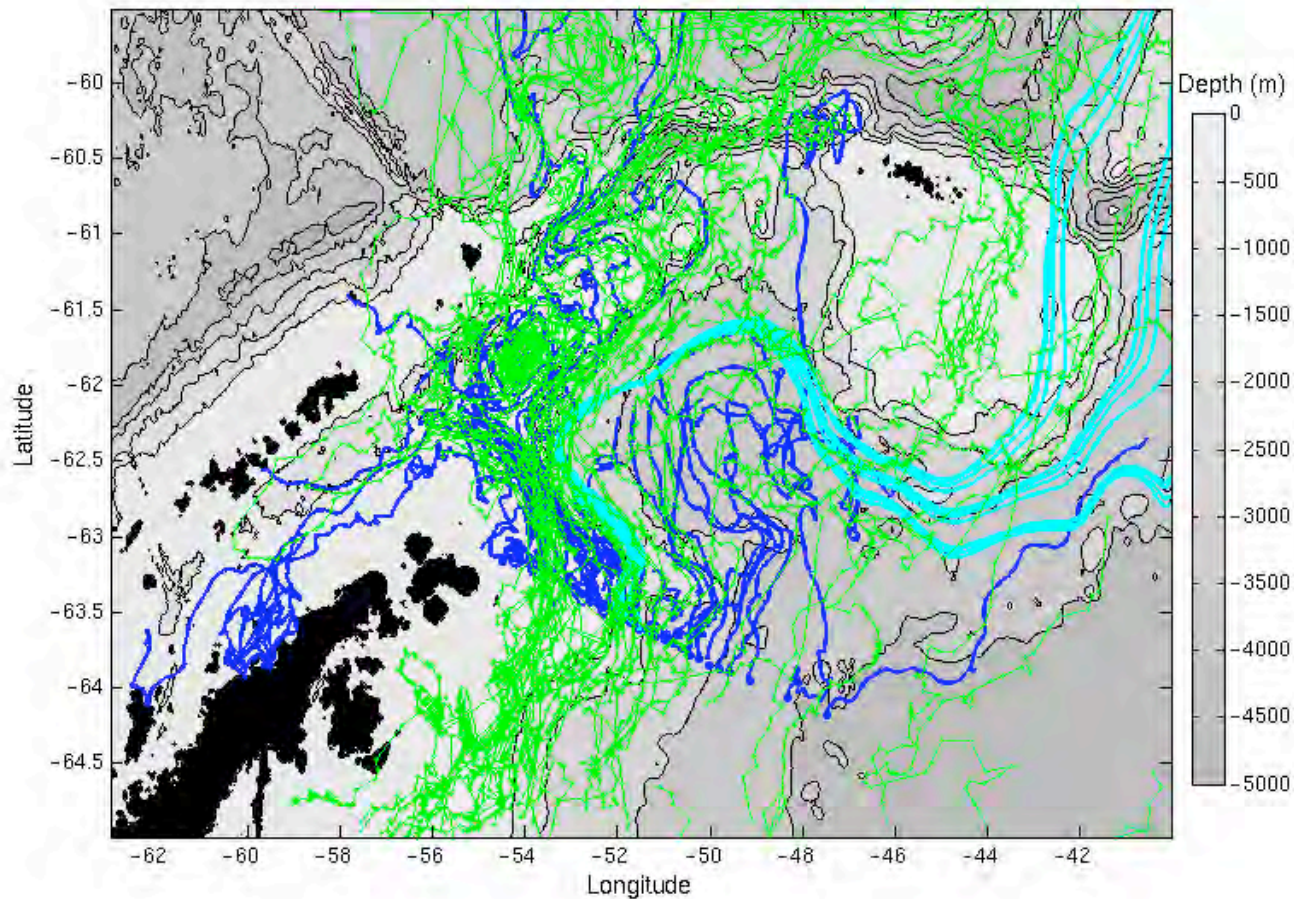
- Data set 1:
QuikSCAT
satellite data
(image tracking)
- Data set 2:
GPS data
- 1 day temporal
resolution
- Period: July 1999
- present

Iceberg tracks

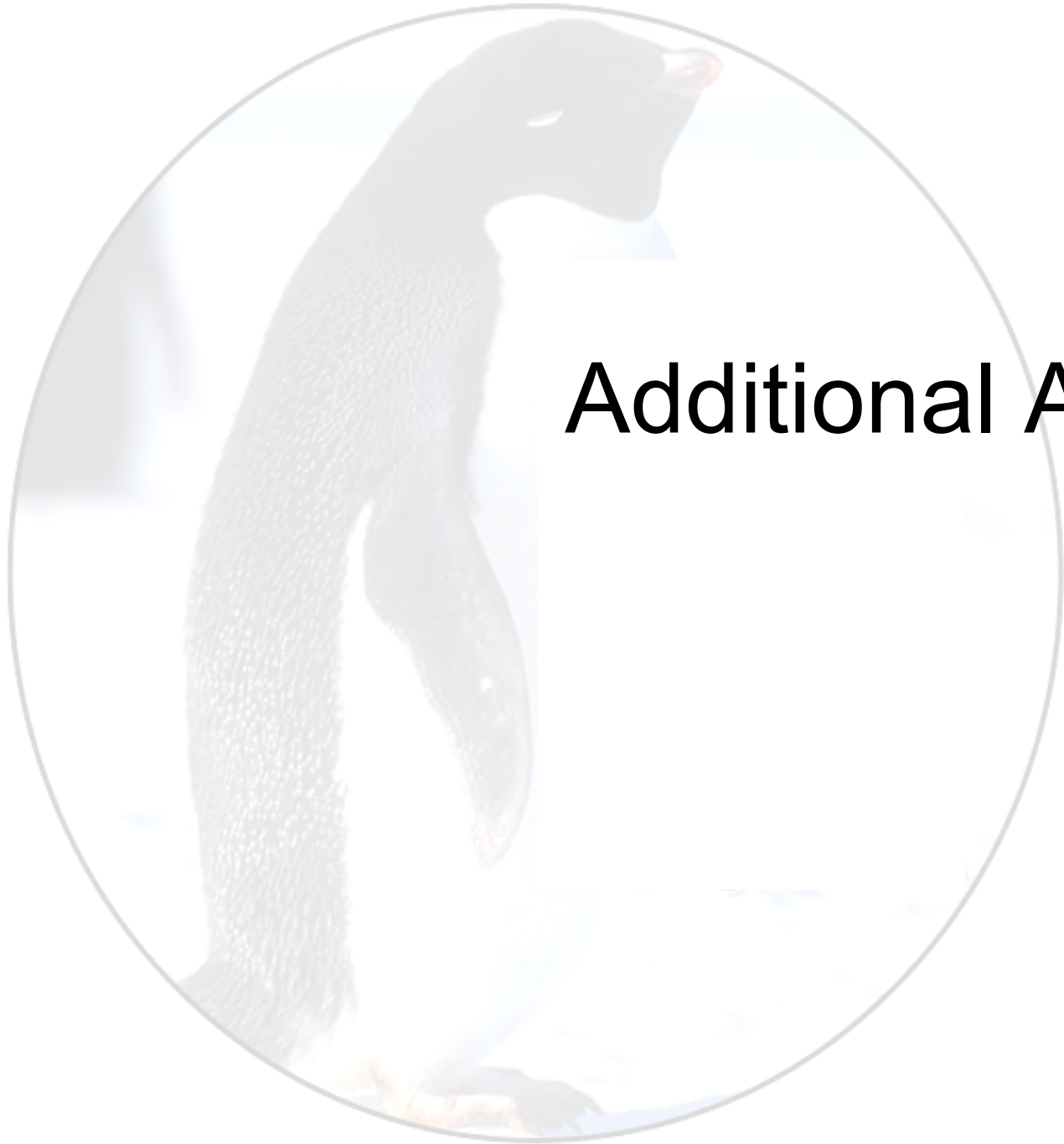


- Data set 1: QuikSCAT satellite data (image tracking)
- Data set 2: GPS data
- 1 day temporal resolution
- Period: July 1999 - present

Iceberg tracks

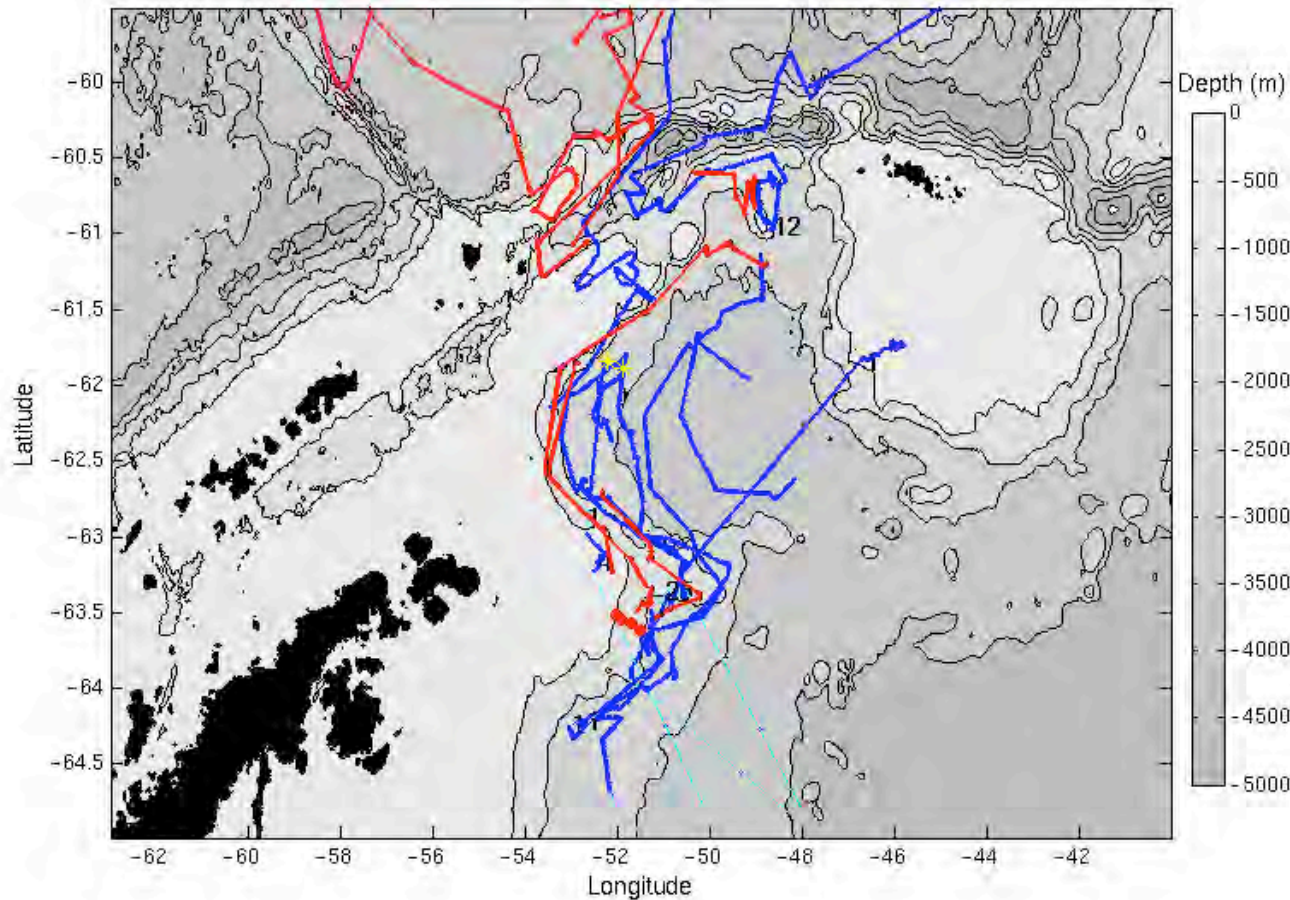


- Data set 1: QuikSCAT satellite data (image tracking)
- Data set 2: GPS data
- 1 day temporal resolution
- Period: July 1999 - present



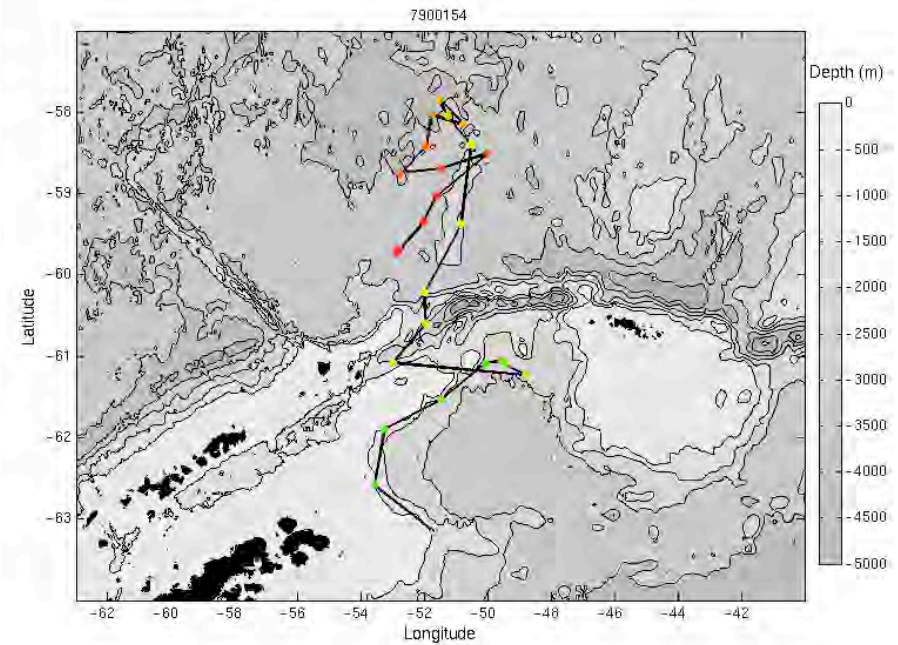
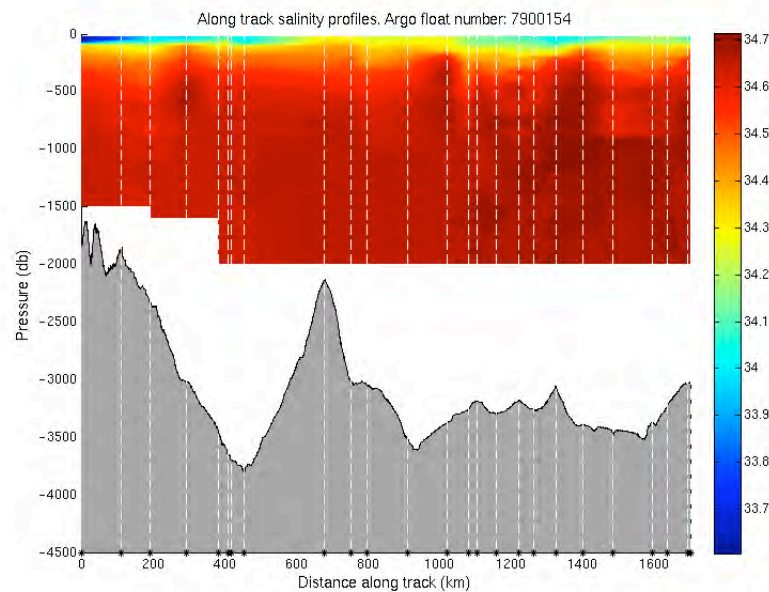
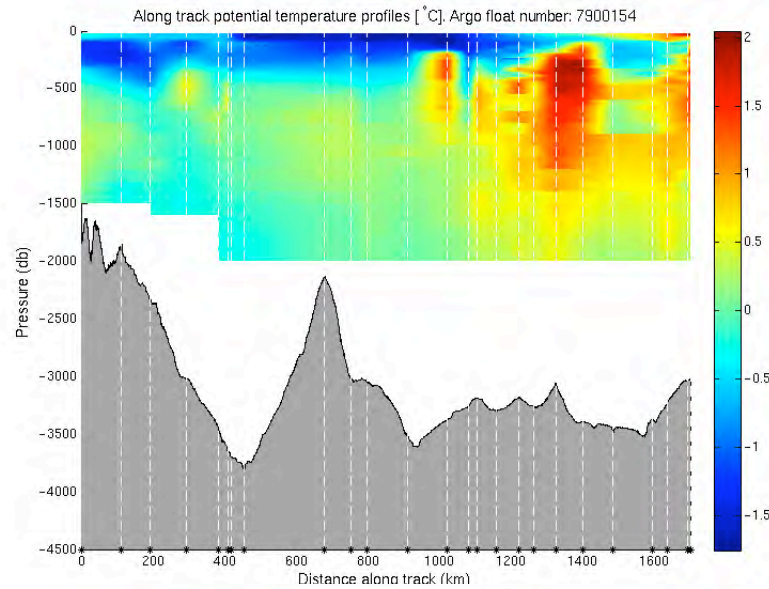
Additional Argo data

Other float trajectories-dashed lines for missing data

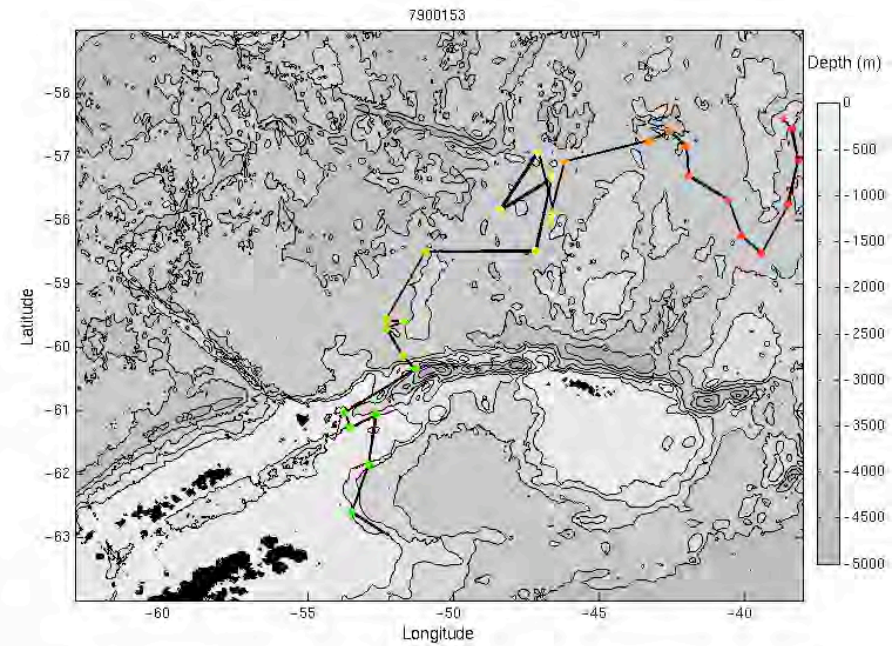
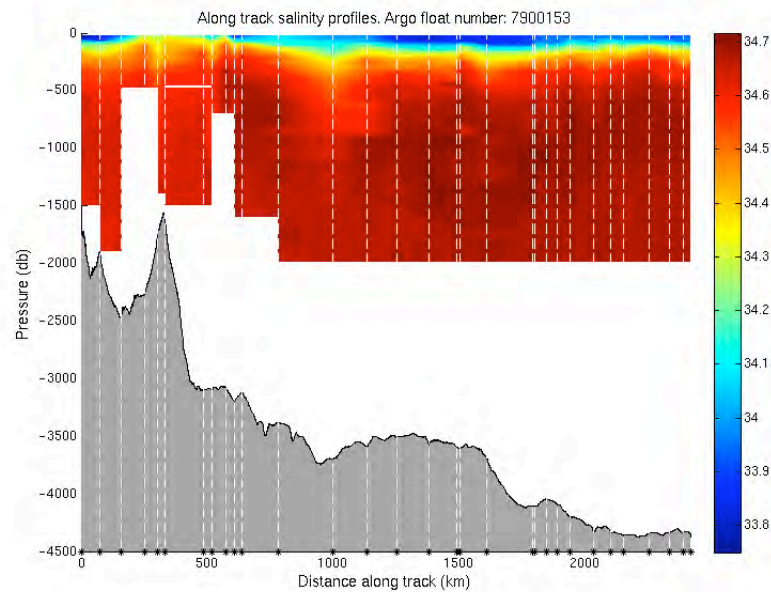
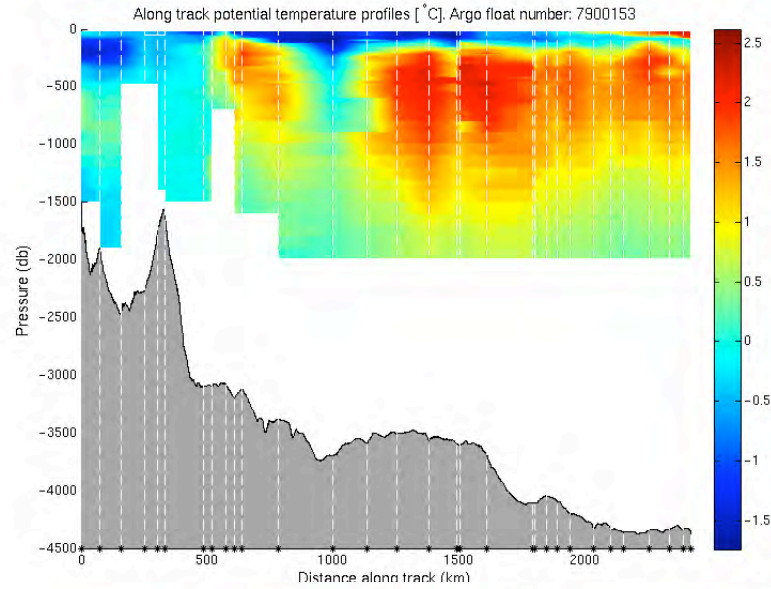


- Additional data from 9 other floats in region [Coriolis data centre]
- 2 currently active

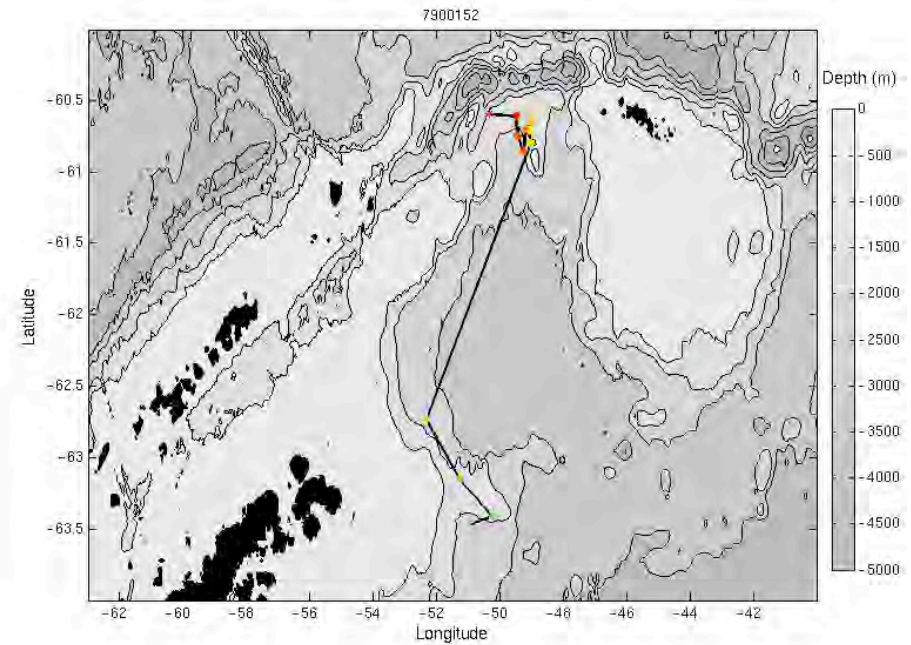
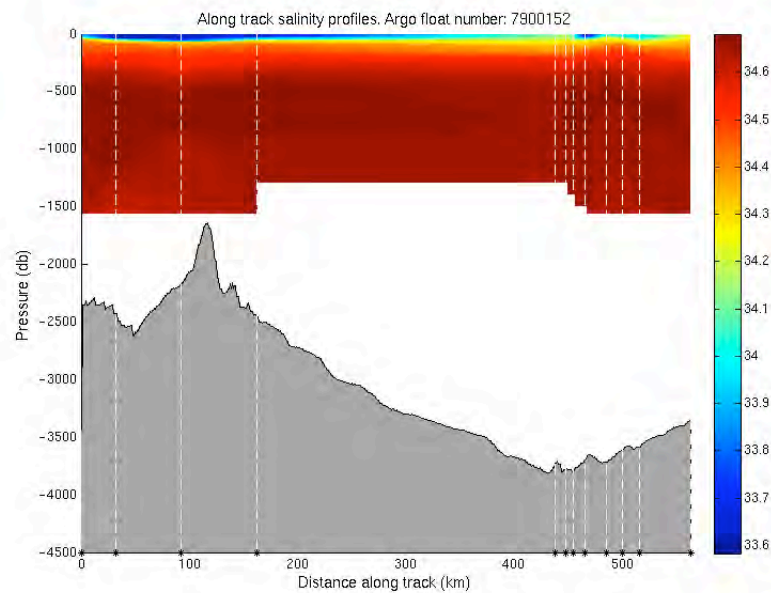
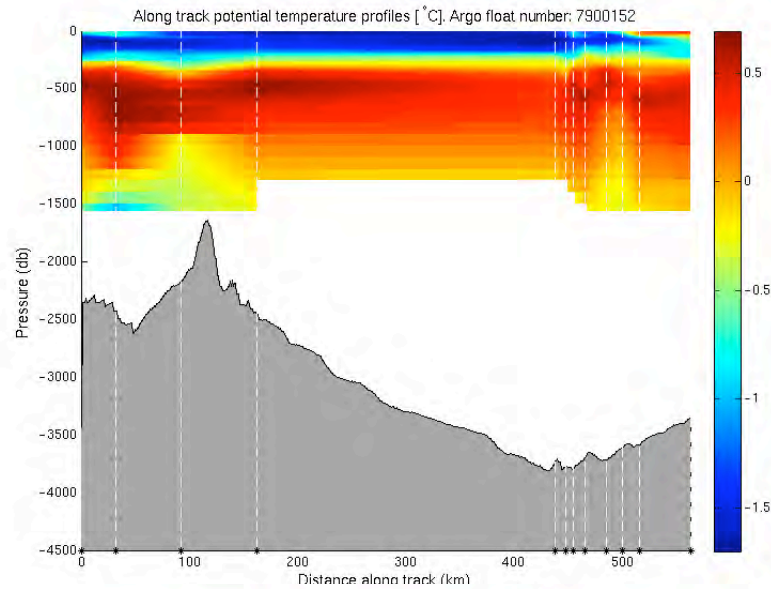
ADELIE Argo profiles



ADELIE Argo profiles



ADELIE Argo profiles





Summary

- Surface drifters and Argo float follow similar trajectories
- Argo floats take shorter times than surface drifters to reach the South Scotia ridge
- Numerical model captures Argo float and drifter trajectories only as far as the southern edge of the South Scotia Ridge
- Good correlation between iceberg and surface drifter trajectories

References & Publications

- Thompson, A.F., K.J. Heywood, S.E. Thorpe, A.H.H. Renner, A. Trastvina-Castro, 2008. Surface circulation at the tip of the Antarctic Peninsula from drifters. *Journal of Physical Oceanography*. In press.
- Thompson, A.F. & K.J. Heywood, 2008. Frontal structure and transport in the north-western Weddell Sea. *Deep-Sea Research I*. In press.
- Argo data - <http://www.usgoda.gov>
- Iceberg data - Image tracking: <http://www.scp.byu.edu> (Brigham Young University, Utah); GPS data – courtesy of H.Hellmer, AWI.

Thank you for listening!

ADELIE Argo profiles

