

Sea-ice buoy deployments during ANT-XXIX/6 & ANT-XXIX/9

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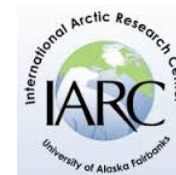
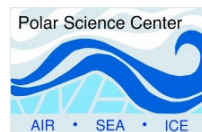
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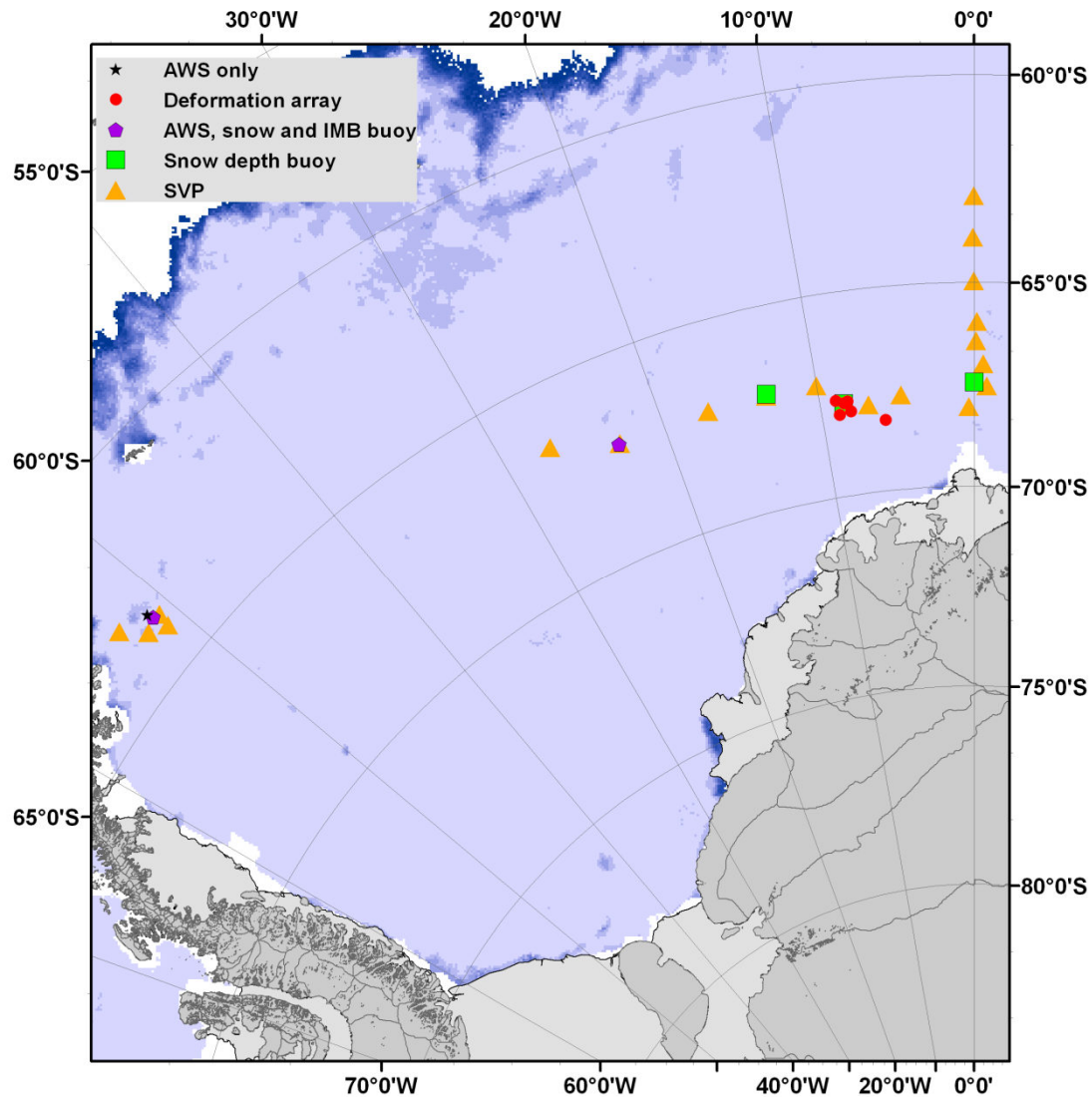
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⁴ University of Colorado ⁵ University of Washington

⁶ University of Alaska



Buoy deployments ANT-XXIX/6



ANT-XXIX/6

08.06.-12.08.13

Cape Town – Punta Arenas
Winter experiment

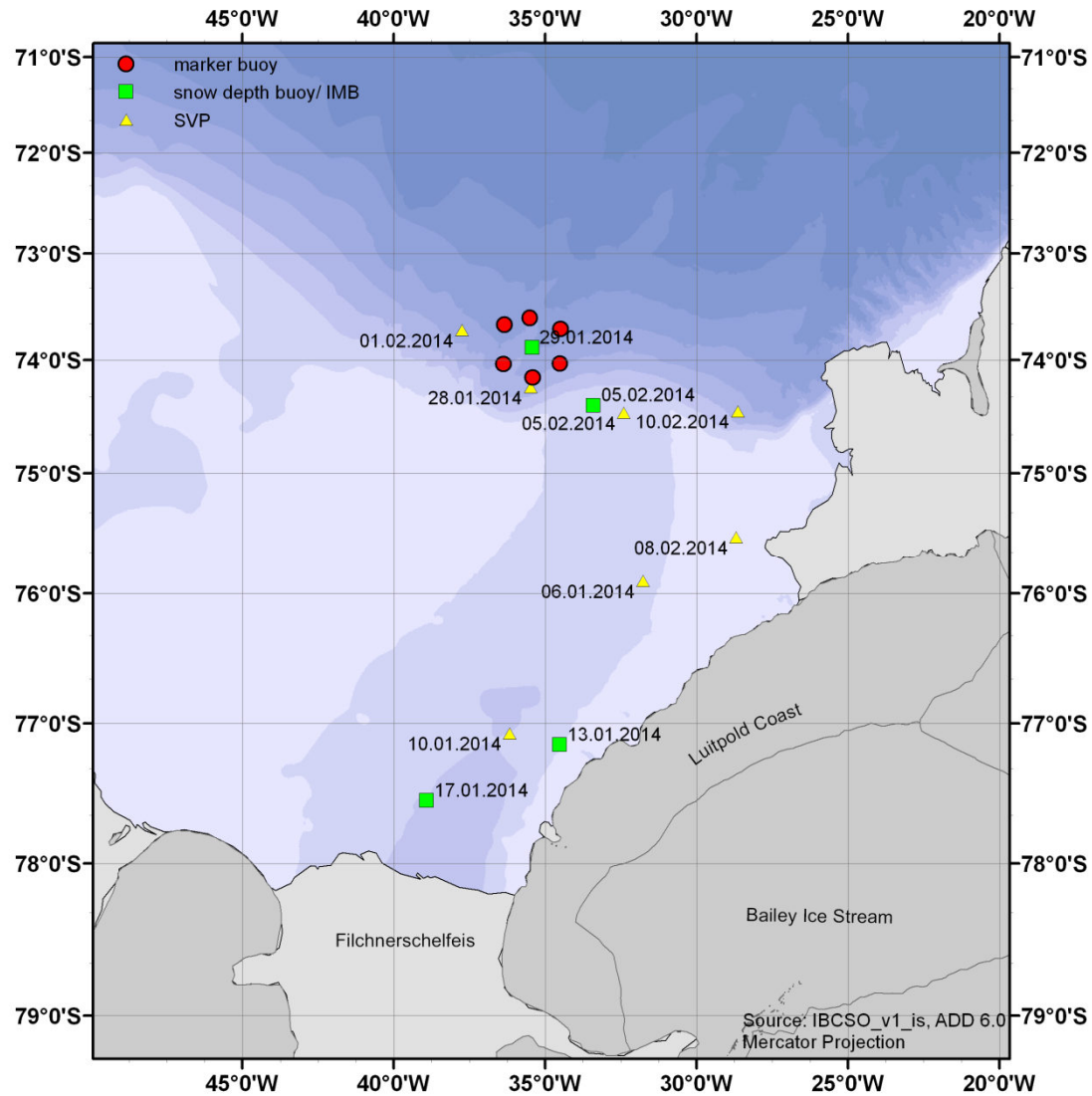
7 kinds of buoys deployed

36 buoys deployed (in total)

Group strength: 8-9

SSMIS Sea ice concentration from 15.09.13 provided by Uni Bremen
Source: IBCSO_v1_js_ADD 6.0
Stereographic Projection

Buoy deployments ANT-XXIX/9, austral summer



ANT-XXIX/9
20.12.13.-05.03.14

Cape Town – Cape Town
Summer expedition

7 kinds of buoys deployed

23 buoys deployed (in total)

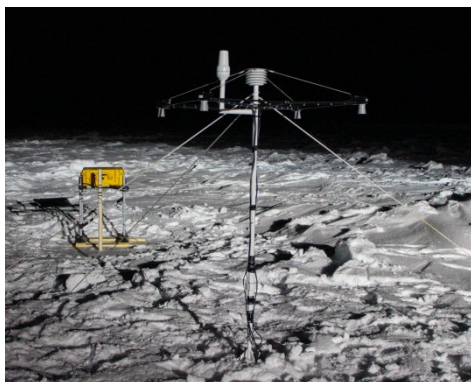
Group strength: 3

Statistics

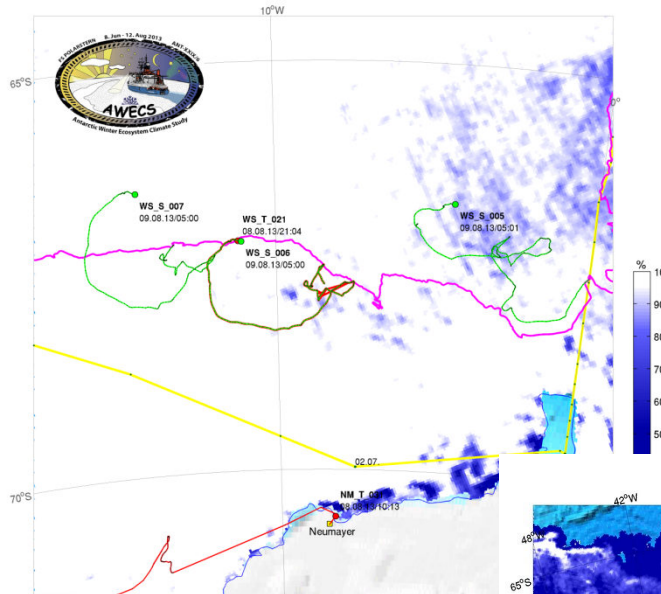
Deployment of 59 buoys

	SVPs	Snow depth buoy (AWI)	snow buoy (SLF)	IMBs	AWS	stress gauge buoy	drift buoys	ADCP	CTD buoy
ANT-29/6	19	3	2	3 (5)	3	1	5		
ANT-29/9	7	4		4			6	1	1
total	26	7	2	7 (9)	3	1	11	1	1

Snow depth buoys/ IMBs



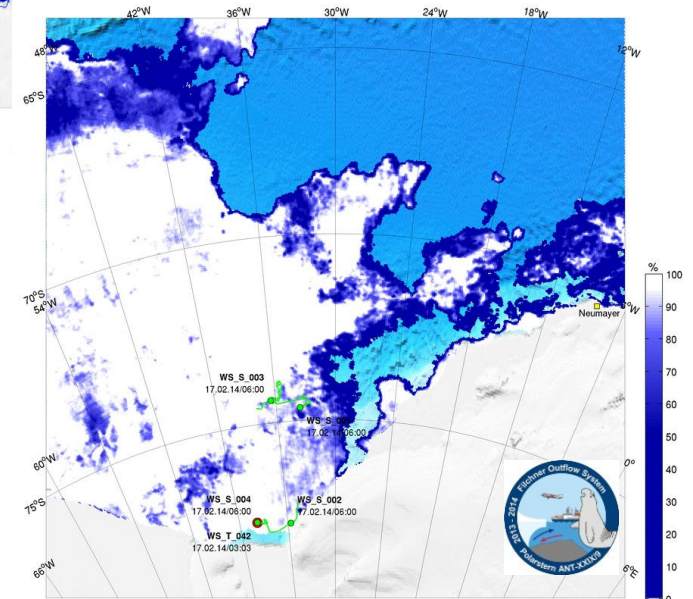
meereisportal.de Expedition ANT-XXIX-6 (8.6.-12.8.2013) - Position Polarstern 09.08.2013/04:39



AWI ALFRED WEGENER INSTITUT Universität Bremen

— geplante Route
— gefahrene Route

Aktuelle Positionen der Bojen und Meereiskonzentration vom 16.02.2014



AMSR2 (3.125km) keine Daten

Buoy deployments: IMB buoys



Ice

Mass

Balance

Aim:

track snow and ice
thickness changes

Use thermistor string to
sense position of
snow/air, snow/ice, and
ice/water interfaces

Buoys deployment: SVP buoys



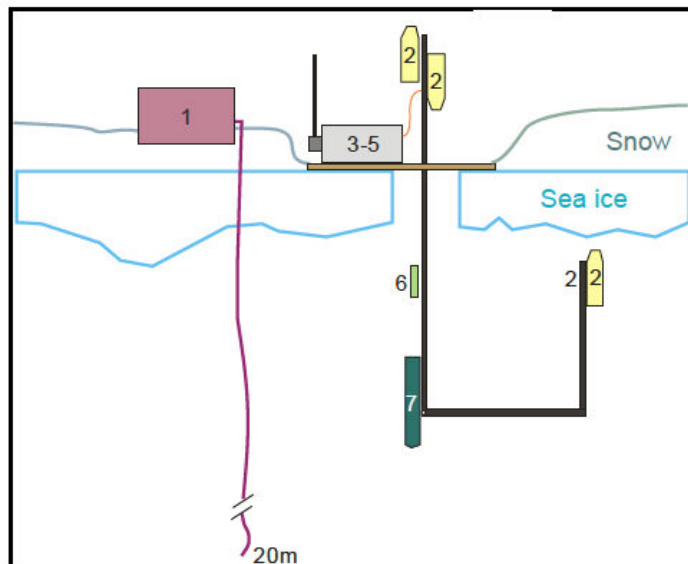
Surface

Velocity

Profiler

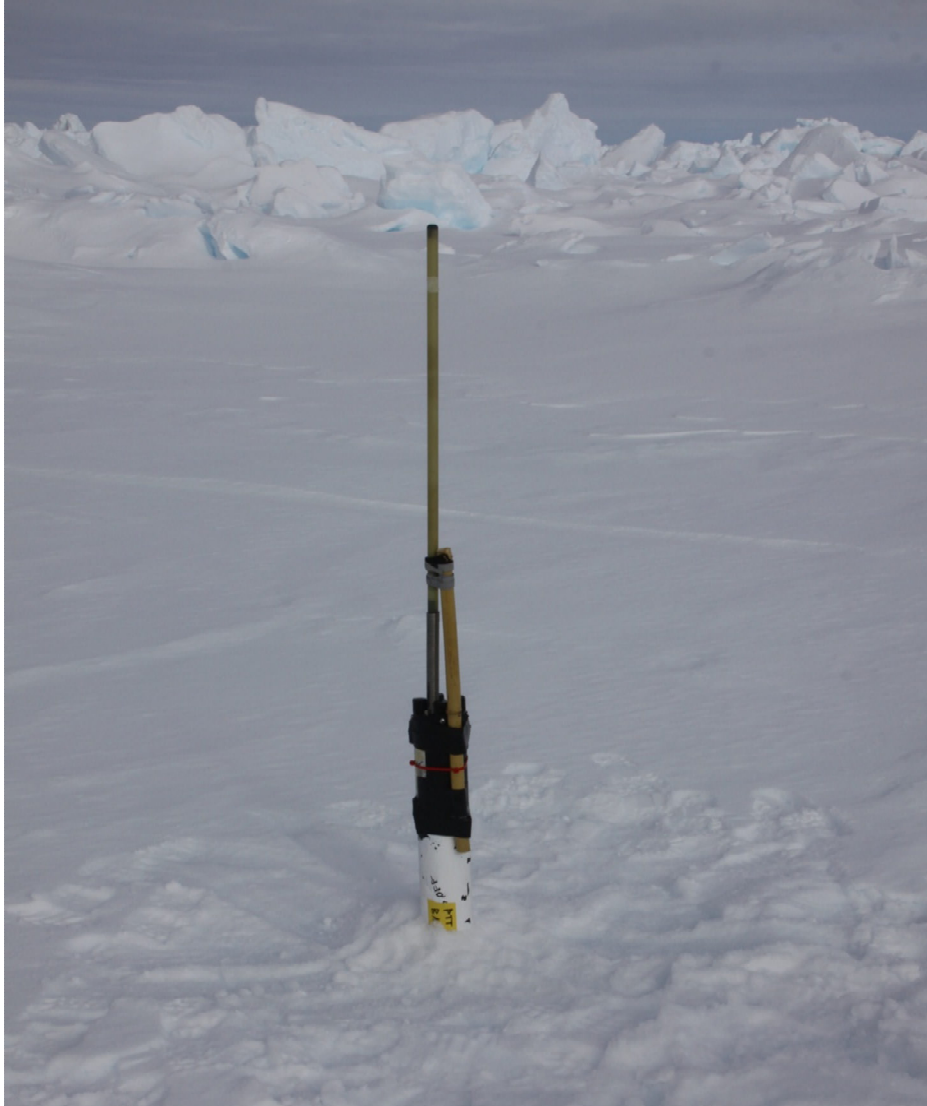
Aim:
track
deformation
and long-term
overall
movement of
sea ice in the
Weddell Sea

ABiPSO



- IMB thermistor chain = 25 m
- MetOcean CTD buoy (under-ice water salinity and temperature)
- ADCP (water current velocity & direction + estimation of zooplankton vertical distribution)
- radiation (incoming irradiance + light transmission through sea ice)
- => radiation station malfunctioned

Buoys deployment: drift buoys



„Deformation Array“ to study the motion and deformation of a distinct area.

Center stations have:

ANT-XXIX/6

- 1 stress gauge buoy
- 1 set of Snow depth buoy+IMB

ANT-XXIX/9

- 1x ABiPSO (ADCP, CTD buoy, IMB)
- Snow depth buoy

Buoy combinations: AWS, IMB, snow buoy (ANT-XXIX/6)

1. *Automatic Weather Station (AWS), 3 deployed:*

- Met sensors: pressure, temperature, humidity, wind speed and direction, solar radiation
- Snow sensors: snow height, snow particle counters
- GPS position



2. *Ice Mass Balance (IMB), 2 deployed:*

- Tracks snow and ice thickness changes
- Use thermistor string to sense position of snow/air, snow/ice, and ice/water interfaces



3. *Snow Height Buoy, 2 deployed*

- Use ultrasonic sensor to measure change in height of snow surface

