Barentshavet: Verdens største produksjon av ‘tungtvann’?

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Bipolar Atlantic Thermohaline Circulation (BIAC) IPY Cluster # 23 (www.gfi.uib.no/BIAC)

Coordinated by Tor Gammelsrød, Geophysical Institute, University of Bergen

Principal objective:
Study the Arctic and Southern Ocean shelf ventilation processes and determine their impacts on the bipolar Atlantic Thermohaline Circulation (THC)

Sub-goals

2. To understand the variability of hydrography and biogeochemistry which preconditions the surface ocean on the high latitude shelves prior to ice formation (5.04 M)

3. To estimate ice formation rates and surface fluxes of heat and CO2 and to investigate the variability of ice formation, HSSW production, air-sea gas exchange, ecosystems, and related processes on interannual and decadal timescales through polynya process studies and hindcast simulations (5.19 M)

4. To validate and improve parameterizations of mixing and downslope cascade processes, estimate associated CO2 and oxygen transports through direct measurements and modeling (9.51 M)

5. To evaluate the contribution to the Atlantic THC and consequences for climate (4.04 M)

6. To design sustainable monitoring systems for dense water production on polar shelves (2.92 M)
UNIS AGF211

Air-Sea Ice Interaction
Greenland
Scotland Ridge

Compensating flow

Atlantic inflow

Overflow

Ventilation

Fresh-water

NADW 3°C

Labrador Sea

Vent.: 4-6 Sv

Upwelling

Mixing

Surface outflow 3 Sv

Cooling

Low latitude

16-18 Sv

12 Sv

6 Sv

6 Sv

Overflow Water 0°C

Greenland Scotland Ridge
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Volume Transports (Sv) BSX
## Heat Transport (TW) BSX

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