

Logistics Planning Outline for the 2010/2011 NBP/ODEN 2-boat Operation

In an attempt to coordinate the science between the ODEN and the NBP for next year's 2-boat operation, the information below will be compiled and passed out during the planning meeting in November.

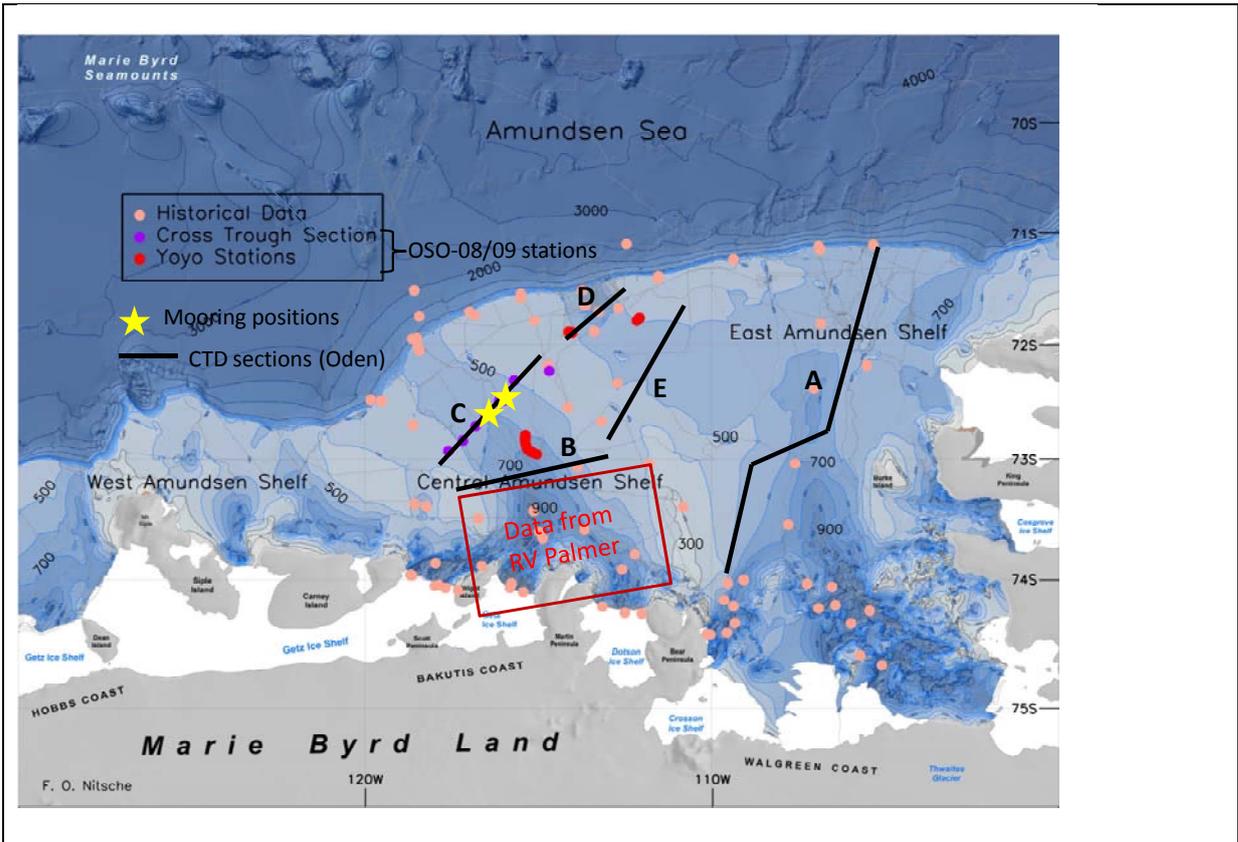
Principal Investigator: Göran Björk
Project leader onboard NBP/ODEN (if other than P.I.): Lars Arneborg or Anna Wåhlin (not decided)
Project title: Circulation of warm oceanic water and glacier melt water in the Amundsen Sea – Ross Sea shelf region, Western Antarctica
Participants onboard (tentative): Total: 2 persons Name and function: Lars Arneborg, and Anna Wåhlin (CTD and mooring work)

Please give a brief cruise synopsis. Include the following: research objectives and proposed cruise track.

Objectives

1. Trace and characterize the inflow of warm Circumpolar Deep Water (CDW) across and along several deep channels at the Amundsen Shelf.
2. Trace the flow of glacier and sea ice meltwater along the Amundsen Sea and Ross Sea shelf region and off the shelf break.
3. Characterize the time variability of the temperature, vertical extent and flow of CDW from moorings deployed during one year.

The main field work in the project is to sample several hydrographic transects with 10-15 CTD stations on each transect in the central Amundsen Sea with focus on the deep channels (sections B-E in figure). Sampling on across shelf transects on the way in and out from the polynya area also of interest (exemplified by section A, including some cross isobaths section). We are also interested in CTD data from the polynya area taken by the other ship (red square in the figure) in order to follow the flow closer to the ice shelves. We plan to deploy moorings with ADCP and TS recorders to observe temperature, salinity, and current velocity at two strategic locations in order to observe the time variability of the vertical extent of the CDW and the flow (yellow stars).



Briefly describe sampling methods and major systems and equipment (collection method (i.e. standard CTD, plankton nets, MOCness Nets, etc...))

Rosette with CTD, turbidity sensor, ADCP, and microstructure sensors
 Deployment of two oceanographic moorings with ADCP and TS sensors.

Sampling methods and sites when ship in motion

Site/area/transect	Type of sampling to be performed, volume of H ₂ O collected

Sampling methods and sites from stationary ship

Sampling site	Type of sampling, weight/volume of samples and equipment, etc.	Time per station
Sections A-E	50 CTD stations	1 hour

Sampling method and sites away from the ship, on ice

Sampling site	No. of persons	Type of sampling, weight/ volume of samples and equipment, etc.	Time per station

Deployment/retrieval of equipment

Site	Type of equipment, weight/ volume, procedure, etc.	Time per station
Star	2 Moorings with bottom mounted ADCP and 5 seacats (TS), 1500kg	6 hours ?

Which are the most prioritized sampling areas/methods?

Site/area	Method/type of sample	Other info
Highest priority have CTD sections B and C plus the mooring sites.		

The following equipment needs to be installed onboard
(describe in detail, also needed connections to electricity, water, gas etc):

CTD/rosette

Lab space	Wet lab	Dry lab	Other / specify
Meters of bench space			
Power needs (VA) 220/380 V			
Cold water (yes/no)			
Hot water (yes/no)			
Sewage (yes/no)			
Compressed air (yes/no)			
Gas (yes/no)			
Fume hood (yes/no)			
Sea water intake (yes/no)			
Other (specify)			

Special lab areas needed:

Clean air room	
Other (specify)	Room with stable temperature for salt analyses 1.5 m (depends on if we bring a salinometer).

Storage of equipment and samples:

	Space needed (m ² /m ³)
Container	
Cold +2°C	
Freezer -20°C	
Other (specify)	

The following chemicals, gases or other hazardous substances will be used, including radioisotopes or other substances which may constitute a threat of contamination for sensitive analyses:

Substance	Weight/vol.	To be used for:

Hazardous waste:

Substance	Weight/vol.	Comments

Disturbance to or sampling of organisms:

1. Species (scientific and English name)	
2. Handling/sampling method	
3. Storage or handling onboard	
4. Possible risks to health or environment	
5. Consideration required from the ship/other researchers	

Cargo to be taken onboard the ship:

Type, handling/storage	Weight (kg)	Volume (m3)
CTD/rosette	300	2
Mooring equipment	3000	4
Instruments and spareparts 6 boxes	400	2

Cargo and samples to be taken off the ship:

Type, handling/storage	Weight (kg)	Volume (m3)
CTD/rosette	300	2
Instruments and spareparts 6 boxes	400	2

Other support needed onboard Oden, or in preparation phase:

Help from the ship-crew on deck for the mooring work.