iAOOS-Norway:

Workshop on the Norwegian Atlantic Current (NwAC)

VENUE:
Norwegian Polar Institute, Polar Environmental Centre (Polarmiljøsenteret), Tromsø, Norway, 31 August (11:00) – 2 September (17:00) 2009

Purpose:
This workshop, organized within the iAOOS-Norway IPY project, aim at gathering people with knowledge about the NwAC, resulting in one or both of these outputs:

1. compile a synthesis paper on the processes governing the NwAC
2. compile or initiate various process papers.

Who can participate?
With an upper limit of 25 participants, the workshop is open to scientists and students with past or ongoing work, unpublished data or new ideas on the NwAC, within the scope of the iAOOS-Norway tasks.
Beforehand knowledge about potential ideas will help us all to accomplish the purposes of the workshop. A circular with all ideas will therefore be distributed before the summer.

Deadlines:
Your contribution: 15 June. Provide maximum 1 page containing sketch/ideas/figures addressing output 1 or 2, by email to Vigdis.Tverberg@npolar.no
Circular: 6 July. A circular with the different contributions will be distributed to the workshop participants.

Tourist information and accommodation:
http://www.destinasjontromso.no/english/index.html

Background:
iAOOS-Norway is exploring the faith of the Atlantic Water (AW) from the Svinøy Section to the Arctic Ocean. The North Atlantic Current enters the Norwegian Sea over the Greenland-Scotland Ridge, and after crossing the ridge it is established as the two-branch Norwegian Atlantic Current (NwAC). The western branch is a jet in the Polar Front through the interior of the Norwegian Sea toward the Fram Strait, while the eastern branch is a barotropic shelf slope current along the Norwegian shelf that partly continues into the Arctic Ocean through the Fram Strait as the West Spitsbergen Current (WSC), but also tends to flow into the Barents Sea. All along its northward routes, the NwAC becomes cooler and fresher, yet the processes responsible for cooling of the Atlantic water need to be elucidated. The bifurcation of the NwAC into the Barents Sea and to the WSC is one such process, which is important for the heat budget of the Arctic Ocean. This is because AW is cooled to near the freezing point in the Barents Sea before cascading into the Arctic at intermediate level, whereas AW in the WSC subducts below the Polar Water, insulating it from further atmospheric buoyancy loss.

We aim at improving the understanding of ..
..coherent structures of along-slope volume transports along the shelf slope.
..the characteristics and processes behind propagation of anomalies along the NwAC.
..relations between variations in atmospheric forcing and the bifurcation of the NwAC into the Barents Sea and to the WSC.
..the role of local topography in creating waves and eddies that affect the NwAC.
..the division between recirculation and inflow to the Arctic in the Fram Strait
..how water mass transformation is related to the major pathways, or interaction with surrounding water.
..the role of mesoscale eddy field in the lateral transport and mixing.
..the influence from lateral transport and mesoscale eddy activity on the density field.

With aid from iAOOS monitoring tasks:
1.1 Monitoring the Svinøy Section as a reference-system for both branches of Atlantic inflow toward the Arctic Ocean.
1.4 Monitoring the Barents Sea branch of the Atlantic Water inflow to the Arctic.
1.6 Complementing the DAMOCLES current meter array across the West Spitsbergen Current with a mooring on the shelf break, that enable us to capture the strongest signal in the topographically vorticity wave field.
1.7 Collaborating on the DAMOCLES and NABOS mooring array north of Spitsbergen, containing vertically profiling CTDs and current meters.
1.2 & 1.5 Use autonomous platforms to obtain detailed hydrographic data of the NwAC.

…and additional aid from POLEWARD monitoring task:
Tracking drifters released in the NwAC.