

**CANADIAN OCEAN SCIENCE NEWSLETTER  
LE BULLETIN CANADIEN DES SCIENCES DE L'OCÉAN**

**SPECIAL BULLETIN 2010-1  
The CNC-SCOR Speaking Tours for 2010/11**

**Contents**

The 2010/11 Eastern Tour .....	1
The 2010/11 Western Tour.....	2

CNC-SCOR annually sponsors two speakers on a tour of oceanographic centres. One speaker is drawn from Eastern Canada to talk to Western centres, and the second goes from the West to the East. The schedule for the 2010/11 talks is given below. Please try to attend the one nearest you.

**The 2010/11 Eastern Tour**

Prof. Roger François will make this year's *Eastern Tour*.

**Title:** *Changes in the deep water circulation of the Arctic Ocean during the last 30 years inferred from the distribution of  $^{230}\text{Th}$  in the water column*

**Abstract:** Dissolved  $^{230}\text{Th}$  was first measured in the water column of the Arctic Ocean in 1983 from an ice camp over Alpha Ridge (Bacon et al., 1989). Subsequently, an additional 22 profiles were measured at various locations between 1987 and 2009 in the Eurasian and Canadian Basins (Cochran et al., 1995; Scholten et al., 1995; Edmonds et al., 1998; 2004; Francois et al., unpub.). These profiles can be compared in space and time to infer changes in the deep water circulation of the Arctic Ocean. In particular, it can be shown that, prior to the early 1990's, a water mass remained largely isolated from the general circulation of the Arctic Ocean, under permanent ice

cover over Alpha Ridge and in northern Makarov Basin. This relative isolation is based on the very high dissolved  $^{230}\text{Th}$  concentrations measured at these two locations in 1983 and 1991, respectively. In the mid-1990's, the pattern of Arctic deep water circulation started to change, resulting in the displacement of this previously isolated water mass into the surrounding basins, first in the Norwegian Sea, and most recently in Canada Basin. These data further illustrate the potential of  $^{230}\text{Th}$  as a powerful, yet rarely used, tracer of deep water circulation.

**Schedule:**

City	Date	Location
Montréal	Nov 22, 14h00	UQAM, PK 7605
Québec	Nov 23, 14h00	Laval, Pavillion Alexandre Vachon, Biol 3068
Rimouski	Nov 24, 10h15	UQAR, ISMER
Halifax	Nov 25, 13h30	Dalhousie, Life Sciences 4263 (Psych. Wing)
St. John's	Nov 29, 13h00	MUN, Chem-Phys C2045

Prof. François holds the Canada Research Chair in Marine Geochemistry for Global Climate Change, located at UBC. His research interests center primarily on:

- Application of geochemistry to problems of paleoceanography with particular emphasis on late Quaternary paleoceanography, radiochemical approaches, carbon and nitrogen isotope geochemistry, and trace element proxies (redox-sensitive elements; paleoproductivity tracers).
- Water column radiochemistry to constrain abyssal circulation and scavenging.

**The 2010/11 Western Tour**

The *Western Tour* will start one week later. The speaker is Dr. Katja Fennel.

**Title:** *Nitrogen and carbon cycling on the North American east coast continental shelf*

**Abstract:** Continental shelves are important players in the global cycling of carbon and nitrogen, partly because shelves are biologically productive systems that receive significant nutrient inputs from the open ocean and from terrestrial sources. It has also been suggested that a significant uptake of atmospheric carbon dioxide occurs on shelves. Both the potential for carbon export from shelves and nutrient input from the deep ocean depend directly on the magnitude of shelf edge exchange, which is hard to observe directly. I will present results from a coupled physical-chemical-biological model for the North American east coast and the adjacent deep ocean that permits resolution of mesoscale shelf edge exchange processes. The model is based on the Regional Ocean Modeling System (ROMS) and includes a biological model of pelagic and benthic nitrogen and carbon cycling, and parameterizations describing the dynamics of inorganic carbon and dissolved oxygen including air-sea gas exchange. Model results suggest that the east coast continental shelves act as a significant sink of fixed nitrogen, but not as disproportionate sink for atmospheric carbon dioxide when compared to the deep ocean. I will briefly discuss opportunities that arise with advances in observational capabilities and advances in data assimilation techniques.

**Schedule:**

City	Date	Location
Edmonton	Nov 29, 13:00	UAlberta, Earth Sciences 1-33
Victoria	Nov 30, 10:30	UVic, Wright Centre A319
Sidney	Nov 30, 14:00	IOS, Main Auditorium
Nanaimo	Dec 1, 14:00	VIU, Arbutus Room
Vancouver	Dec 2, 10:30	UBC, EOS-Main 330A
Winnipeg	Dec 3, 10:00	DFO-FWI, Seminar Rm

Katja Fennel holds a Canada Research Chair in Marine Prediction and is lead researcher in the [Marine Environmental Modeling Group](#) at Dalhousie University. She has published widely in the area marine biogeochemical cycling of carbon, nitrogen and oxygen. Her research interests lie in the development of coupled physical-biogeochemical models, which offer enormous potential for predicting changes in marine environments in response to climate variability and direct human influences.

**CANADIAN OCEAN SCIENCE NEWSLETTER  
LE BULLETIN CANADIEN DES SCIENCES DE L'OCÉAN**

Previous newsletters may be found on the CNC/SCOR web site.  
Les bulletins antérieurs se retrouvent sur le site web du CNC/SCOR.

Newsletter #54 will be distributed on Dec. 8, 2010. Please send contributions to Bob Wilson, [wilson@telus.net](mailto:wilson@telus.net)  
Bulletin #54 sera distribué le 8 décembre 2010. Veuillez faire parvenir vos contributions à Bob Wilson, [wilson@telus.net](mailto:wilson@telus.net)

If you wish to subscribe to this newsletter, please send an email to [listserv@lists.mcgill.ca](mailto:listserv@lists.mcgill.ca) with the following message:  
SUBSCRIBE OCEAN-NEWSLETTER.

If you wish to cancel your subscription, please send an email to [listserv@lists.mcgill.ca](mailto:listserv@lists.mcgill.ca) with the following message: SIGNOFF  
OCEAN-NEWSLETTER.

Si vous désirez vous abonner à ce bulletin de nouvelles, veuillez envoyer un courriel à [listserv@lists.mcgill.ca](mailto:listserv@lists.mcgill.ca) incluant le message: SUBSCRIBE OCEAN-NEWSLETTER.

Si vous désirez annuler votre souscription, veuillez envoyer un courriel à [listserv@lists.mcgill.ca](mailto:listserv@lists.mcgill.ca) incluant le message: SIGNOFF  
OCEAN-NEWSLETTER

[WWW.CNCSCOR.CA](http://WWW.CNCSCOR.CA)