2012 Project Summary

From Rivers to the Ocean: The Dynamics of Freshwater Export from Hudson Strait

PIs: Fiamma Straneo¹, Steven Lentz¹

International Collaborators: Yves Gratton², Stephen Déry³

¹Woods Hole Oceanographic Institution, Woods Hole, MA

²INRS, University of Quebec, Canada

³University of Northern British Columbia, Canada

This project seeks to quantify the variability of the freshwater export from Hudson Strait, the third largest oceanic contributor of freshwater to the North Atlantic, and to understand which processes regulate its variability. It involves the analysis of moored data, a high resolution regional process model and an idealized model.

Recent Results

A series of papers showing that the freshwater export is strongly dominated by the regional wind forcing, on interannual time scales, and to the river input variability on longer time scales have been published this year. A synopsis of the observed freshwater outflow will be presented at the upcoming IPY meeting this spring.

Bibliography

- Déry, S. J., T. J. Mlynowski, M. A. Hernández-Henríquez, and F. Straneo, 2011: Variability in trends and streamflow input to Hudson Bay. *J. Mar. Sys*, 88, 341-351.
- St-Laurent, P., F. Straneo, D. Barber, 2011: A conceptual model of an Arctic sea. J. Geophys. Res., under revision.
- St-Laurent, P., F. Straneo, J.-F. Dumais, D.G. Barber, 2011: What is the fate of the river waters of Hudson Bay? *J. Mar. Sys.*, 88, 352-361.
- Sutherland, D. A., F. Straneo, S. Lentz, P. St-Laurent, 2011: Observations of fresh, anticyclonic eddies in the Hudson Strait outflow. *J. Mar. Sys.*, 88, 375-384.

Project summary from U.S. CLIVAR Office, 2012: Fourth Annual Progress Report for a SOST Near-Term Priority Assessing Meridional Overturning Circulation Variability: Implications for Rapid Climate Change, Report 2012-1, U.S. CLIVAR Office, Washington, DC 20006.