

## **A study of the freshwater fluxes in the East Icelandic Current**

### **Proposed research activity in Iceland in connection with IPY 2007-2008**

The main objectives of the proposed project are to:

1. Construct and maintain an array of moorings with current meters, microcats and other instruments within the East Icelandic Current that would be deployed in summer 2007 and recovered and possibly redeployed in 2008. CTD measurements along the array will be made as often as possible and at least 4 times annually during the IPY.
2. Measure the flux of fresh water within the current and its variability.
3. Use the data to try to find the cause of the variability of the fluxes in order to increase our knowledge of the mechanisms governing the variability.
4. Relate the measurements made within the IPY to the long and regular time series of the hydrography in the area that have been obtained by the Marine Research Institute for more than half a century.

The circulation of the freshwater from the high Arctic within the Nordic Seas is not well established. Especially the fluxes from the East Greenland Current into the Greenland and Iceland Seas are not well known and very little is known about their variability and the mechanisms governing this variability. This is of interest since within the Greenland and Iceland Seas deep water formation takes place that contributes significantly to the thermohaline circulation. An increase in the freshwater flux into the Greenland and Iceland Seas could lead to a halt in the deep water formation there, and a reduction in the thermohaline circulation. This has actually been proposed by many numerical models predicting a climate change resulting from increasing greenhouse gases in the atmosphere. It should therefore be of primary interest to measure these fluxes and their variability. An advantage with making the flux measurements in this area is that it is easily accessible during the whole year and ice usually does not interfere with the measurements.

#### **Logistics:**

2 cruises, in 2007 and 2008 respectively

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