AR7W LADCP: Home

Overview
AR7W is a line crossing the Labrador Sea of the North Atlantic from Newfoundland (53°40’ N, 55 °30’W) to the west coast of Greenland (60°30’N, 48 °15’W). Since 1990, investigators at Bedford Institute of Oceanography (BIO) in Dartmouth, Nova Scotia, have collected hydrographic data almost yearly along this line, and since 1995, lowered ADCP data have been collected as well. Repeated occupation of this line is expected to elucidate aspects of interannual variability in the Labrador Sea, including deep winter convection, hydrographic properties, and boundary current strength.

Goals
Our project deals primarily with the ADCP data, and has the following goals:

- Process the lowered and shipboard ADCP data for all cruises since 1995, to obtain an annual time series of absolute velocity fields along AR7W;
- Combine these directly measured velocities with geostrophic velocities computed from concurrent hydrographic data;
- Use the results to determine the mean velocity structure along AR7W over the time period of observation, as well as how the flow field evolves over time, specifically evaluating boundary current variability, meridional heat fluxes, and their relationship to convection strength and external forcing;
- Continue to support the collection of LADCP data on these cruises;
- Provide public access to the processed LADCP datasets in a timely manner.

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