



## **Davis Strait Transport and Freshwater Fluxes**

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Davis Strait is a critical site for investigating freshwater exchange between the Arctic and North Atlantic Oceans and an ideal location for monitoring temporal and spatial variability of the critical upstream boundary condition for Labrador Sea convection. Fluxes through the Strait represent the net integrated Canadian Archipelago through-flow, modified by terrestrial inputs and oceanic processes during its southward transit through Baffin Bay. By the time they reach Davis Strait, Arctic waters already embody most of the transformations they undergo prior to exerting their influence on the deepwater formation sites in the Labrador Sea.

Hydrographic sections occupied during ship-based surveys and by autonomous underwater gliders supplement year-round current, temperature and salinity measurements collected by an extensive moored array that characterize watermass variability, currents and transport (already have year-round). We summarize four years of sections (occupied in autumn 2004-2007) contrasted against climatological conditions derived from historical measurements spanning 1928-2004. Moored measurements, including novel new instrumentation capable of measuring temperature, salinity and velocity near the ice-ocean interface, characterize the seasonal cycle of the freshwater outflow over the Baffin and Greenland shelves and provide volume flux estimates that, in 2004-2005, fall well below those reported from earlier measurement programs.