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Sea-ice melt and surface run-off fluxes through the Denmark Strait

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The supply of freshwater to the northern North Atlantic is of great importance in the global thermohaline circulation. North Atlantic Water flows around the Nordic Seas increasing in salinity due to evaporation and ice formation before entering the northern North Atlantic, where it sinks due to evaporative cooling and returns southward as North Atlantic Deep Water. Freshwater entering the northern North Atlantic via the Denmark Strait is thought to modulate the surface salinity and influence the rate of North Atlantic Deep Water formation. We present a densely sampled section of freshwater transport through the Denmark Strait obtained from oxygen isotope samples and LADCP data collected during the ARCICE cruise in 1999. The section is considered in relation to the freshwater budget of the East Greenland Current and measurements of freshwater transport through the Fram Strait.