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North Atlantic Current long-term transport observations at the Mid-Atlantic Ridge

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The North Atlantic Current (NAC) brings warm and saline water, exported by the Gulf Stream from the tropics/subtropics, from the western in the eastern basin. Four Inverted Echo Sounders were moored between 47°40'N and 52°30'N to study the transport variations of the NAC at the gateway between western and eastern Atlantic. The separation in three segments (northern, central, and southern) allows to resolve the meandering of the NAC between the spreading paths through the different fracture zones. We utilise the correlation between the NAC transport inferred from the 2006 to 2010 moored instruments and the geostrophic surface velocity from altimeter data to construct a time series of NAC transports from 1992 to 2013. By analysing the two time series we compute the transport means and trends, resolve the variations from daily to inter-annual time scales, and calculate transport composites to investigate the relation between the North Atlantic Oscillation and NAC transport variations.