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Changes in the North Atlantic Current over the last two millennia

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Over the last 2000 years, the climate of the North Atlantic region was punctuated by centennial oscillations, which despite their small magnitude had important societal impacts, particularly in NW Europe. The most favoured explanations for this climate variability invoke changes in external forcings which were likely amplified by ocean-ice-atmosphere feedbacks. Traditionally, ocean changes, specifically the strength of the Atlantic Meridional Overturning Circulation have been invoked to explain some of this centennial climate variability. However, new research suggests that the strength of the subpolar gyre and its northward heat transport by the North Atlantic Current likely contributed to the climate variability recorded in Europe. In this study, we explore the hydrographic variability of the North Atlantic Current using four subdecadally to decadally resolved sediment cores that lie within the pathway of this watermass. New and published foraminiferal-based temperature and salinity reconstructions from these four locations are combined to study their common variability and obtain a robust reconstruction of the North Atlantic Current across the last two millennia.