



Fennoscandian Ice Sheet melting during periods of North Atlantic cooling

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The Last Glacial Period is characterized by discrete events of melting (Toucanne et al., 2015) and collapse (Barker et al., 2015) of Northern Hemisphere ice sheets during North Atlantic stadials. While the paradox of catastrophic Laurentide Ice Sheet discharge through the Hudson Strait (Heinrich Events) seems to be approaching resolution (i.e., Bassis et al., 2017), it is not presently clear how the terrestrial-terminating margins of the Fennoscandian Ice Sheet were destabilized during periods of extensive N. Atlantic cooling (i.e., Toucanne et al., 2015). Furthermore, it is not known whether the contemporaneous melting of the Laurentide and Fennoscandian Ice Sheets during N. Atlantic stadials (Toucanne et al., 2015) is unique to the Last Glacial Period or is a common, recurring feature of Pleistocene glaciations. Here, we show that increases in non-radiogenic ϵNd of sediments from the Bay of Biscay core MD03-2692 occur at the onset of two N. Atlantic stadials during MIS 6. Based on analogous evidence from the Last Glacial, we argue that our ϵNd and related paleoclimatic proxies reveal two episodes of FIS meltwater and sediment discharge ca. 156 and 176 ka BP. These findings provide new insight into the relationship between freshwater release into the North Atlantic, prolonged stadial conditions in the Northern Hemisphere, and the termination of ice ages.

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