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The 14C age of glacial North Atlantic surface waters: Greenland Interstadial Events 2-13

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We present a new compilation of surface ocean (Globigerina bulloides) AMS 14C ages for Greenland Interstadials (GI) 2-13, spanning the interval 25,000 - 45,000 cal BP from the mid-latitude NE Atlantic Ocean. Two marine sediment cores located 83 km apart in the NE Atlantic have been studied: MD95-2006 (Barra Fan; 57˚01.82 N, 10˚03.48 W; 2120m water depth) and MD04-2822 (Rockall Trough; 56˚50.54 N, 11˚22.96 W; 2344m water depth). Replicated sea surface temperature (SST) records show evidence for abrupt warming events which we correlate directly to the D/O cycles of the Greenland (NGRIP) ice-core oxygen isotope record. We test the proposed synchronization of these records using three geochemically distinct tephra isochrons (NAAZ-1, Fugloyarbanki and NAAZ-2). Our data provide a potentially useful new surface ocean record of 14C age from the mid-latitude North Atlantic, are broadly consistent with 14C age data published from the Iberian margin and highlight the advantage of tuning mid-latitude SST records to Greenland when constructing marine age-models through this time interval.