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Precise dating of centennial-millennial scale climate variations in sediment archives from the Antarctic continental margin off Dronning Maud Land by 14C plateau tuning

Ralf Tiedemann, Juliane Müller, Lester Lembke-Jene, and Gesine Mollenhauer
Alfred-Wegener-Institut, Bremerhaven, Germany (ralf.tiedemann@awi.de)

Rapid changes in ocean circulation and polar temperature variability have been observed in glacial and deglacial paleoclimate records from marine and ice core archives. However, an obstacle to progress in understanding the ice-ocean-bedrock-climate interactions on centennial-millennial timescales is due to the paucity of sediment records with precise chronologies. The sediment archive along the continental margin of Dronning Maud Land provides an excellent opportunity for high resolution ^{14}C dating as it contains sufficient amounts of planktonic foraminifers. We dated a 7 m long sediment sequence from core PS111/13 by means of ^{14}C plateau tuning (Sarnthein et al., 2015) to produce a solid chronological framework for multi-proxy reconstructions of climate and environmental change from 7000 to 30,000 years that can be linked to ice core chronologies.

Sarnthein et al., Radiocarbon, 2015, 57 (1), 129–151.