Late Pliocene age control and composite depth at ODP Site 982, revisited

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Ocean Drilling Program (ODP) Site 982 provided a key sediment section at Rockall Plateau for reconstructing northeast Atlantic paleoceanography and monitoring benthic δ18O stratigraphy over the Late Pliocene to Quaternary onset of major Northern Hemisphere Glaciation. A renewed hole-specific inspection of magnetostratigraphic events and the addition of epibenthic δ18O records for short Pliocene sections in holes 982A, B, and C, crossing core breaks in the δ18O record published for Hole 982B, now imply a major revision of composite core depths. After tuning to the orbitally tuned reference record LR04 the new composite δ18O record results in a hiatus, where the Kaena magnetic event has been lost, and in a significant age reduction for all proxy records by 130 to 20 ka over the time span 3.2–2.7 Ma. Our study demonstrates the significance of reliable composite-depth scales and δ18O stratigraphies in ODP sediment records for ocean-wide correlations in paleoceanography, such as for a Late Pliocene sea surface temperature (SST) drop at Site 982 that now well compares with SST trends found elsewhere in the North Atlantic.