Evolution of export production, SST and seawater $\delta^{18}O$ in the Antarctic Southern Ocean across the MPT

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The mid-Pleistocene transition (MPT; 1.25–0.7 Myr) marked a fundamental change in the periodicity of the climate cycles, shifting from a 41-kyr to a high-amplitude 100-kyr cycle without any significant change in orbital forcing. Hypotheses to explain the MPT involve changes in glacial dynamics, non-linear responses to orbital forcing, and internal changes in the carbon cycle. Specifically, a decrease in pCO_2 during peak ice age conditions and the associated global cooling is often proposed as one of the possible triggers for the MPT. Previous results have indicated that the Southern Ocean provides a coherent two-part mechanism for the timing and amplitude of the glacial/interglacial pCO_2 variations. However, there is still much uncertainty and debate regarding the response of the Antarctic Southern Ocean biogeochemistry to changes invoked by the MPT, and its contribution to the proposed pCO_2 variations. Here, we show 1.5 Myr-long records of export production, sedimentary $CaCO_3$ and foraminiferal stable isotopes from South Atlantic ODP Site 1094. Paired measurements of $\delta^{18}O$ and Mg/Ca on planktonic *N. pachyderma* allow us to calculate seawater $\delta^{18}O$ that is known to vary linearly with salinity in the modern ocean.