



Sensitivity of Antarctica to ocean warming during the Last Interglacial

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The Last Interglacial (130 to 116 thousand years ago) is widely considered to have been warmer than today, but the timing and contribution of Antarctica to global sea level rise during this period remains uncertain. Here we report a new highly-resolved blue ice record close to the West Antarctic Ice Sheet grounding line that implies high-latitude ocean warming and substantial mass loss during the beginning of the Last Interglacial. To explore the extent and magnitude of associated changes we use a global network of marine records corrected for ocean current drift to drive an ice sheet model. We find a warming of 2°C in annual Southern Ocean sea surface temperatures relative to 1981-2010 is sufficient for Antarctica to have contributed 3.2 metres equivalent global sea level within the first millennium of forcing. Our results demonstrate that the Antarctic ice sheets are highly sensitive to pervasive ocean warming, with important implications for future sea-level rise.