

Millennial-scale climate, ice sheet and sea level change during the Last Interglacial

Andrea Dutton

University of Florida

Considerable debate surrounds the timing and evolution of sea-level changes during the Last Interglacial period, ~125 thousand years ago. Rapid, millennial-scale changes in sea level have been proposed for the beginning, middle, and/or end of this warm, interglacial period, where each of these scenarios has different implications for the way that polar ice sheets will behave in a warming world.

We have generated a suite of U-Th ages for fossil corals in the Seychelles with a detailed sedimentary and stratigraphic context to determine the timing of peak sea level and of several abrupt interruptions to vertical reef accretion. Using multiple, independently-derived chronologies, we establish a temporal link between episodes of reef growth and meltwater pulses into the N. Atlantic that coincide with abrupt anomalies in regional climate and the strength of the Asian Monsoon. These observations suggest a bipolar interplay of ice sheet growth and decay between the Northern and Southern hemispheres that contribute to millennial scale oscillations in sea level and climate during this past warm period.