Geophysical Research Abstracts
Vol. 17, EGU2015-12105, 2015
EGU General Assembly 2015

Tropical Atlantic temperature seasonality at the end of the last interglacial

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The end of the last interglacial period, $\sim$118 kyr ago, was characterized by substantial ocean circulation and climate perturbations resulting from instabilities of polar ice sheets. It has been suggested that these perturbations at the end of the last interglacial are crucial for a better understanding of future climate change. The seasonal temperature changes of the tropical ocean, however, which play an important role in seasonal climate extremes such as hurricanes, floods and droughts at the present day, are not well known for this period that led into the last glacial. Here we present a monthly resolved snapshot of reconstructed sea surface temperature in the tropical North Atlantic Ocean for 117.7 $\pm$ 0.8 kyr ago, using coral Sr/Ca and δ^{18}O records in a precisely ^{230}Th/U dated shallow-water fossil coral recovered from the southern Caribbean (Bonaire). We find that temperature seasonality was similar to today, which is consistent with the orbital insolation forcing. Our coral records and simulations with a coupled atmosphere-ocean general circulation model (COSMOS) indicate an orbital control on temperature seasonality in the tropical North Atlantic at the end of the last interglacial, despite the large-scale perturbations of ocean circulation and climate during this period, and suggest that temperature seasonality of the tropical surface ocean is controlled mainly by orbital insolation changes during interglacials.