



## **Abrupt climate changes in the West Tropical Atlantic. Alkenone reconstruction of SST over the last 140,000 years in Guiana basin**

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The Guiana basin (western tropical Atlantic) has a strategic location close to the Amazon River and the equator. This site has received very limited attention from a palaeoceanographic perspective. In the present study, sea surface temperatures (SST) over the last 140 ky have been obtained by using the alkenone unsaturation index Uk'37 in the sediment core MD03-2616 (7°N, 53°W).

The results have allowed to describing for the first time the climate evolution of this area during the last interglacial (MIS5e) and last glacial (MIS2-4) at centennial resolution (200 yr). Maximum SSTs are observed during the last interglacial (ca. 29°C) which is +1°C warmer than present and 1°C warmer than Holocene temperatures (ca. 28°C). Minimum SSTs are recorded in the last glacial (ca. 25°C; more than -2.5°C below present SST). The interglacial-to-glacial SST amplitude of SST variability is subdued (less than 3°C) which is common in the climate variability of tropical areas due to the strong insolation. Nevertheless, it has been found that the alkenone SST record in this tropical region is sensitive enough to trace warming/cooling episodes following the Greenland ice cores (Dansgaard-Oeschger events, D-O) and the extreme-cold periods in the North Atlantic (Heinrich events, HE). In Guiana, these events involve changes of 1-2°C and the deglaciation provides the most intense cooling, 3°C.

Comparison of the SST record in Guiana with those of other Atlantic cores from mid and low latitudes and ice cores (Greenland and Antarctica) shows that the changes in the intertropical convergence zone (ITCZ) constitute an effective method for the rapid transfer of the influence of climatic events at high latitudes to these tropical areas, at least in the western tropical Atlantic.