



Sub-seasonal reconstructions of South Pacific climate during the last deglaciation from Tahiti corals - preliminary results from IODP Expedition 310

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The Integrated Ocean Drilling Program (IODP) Expedition 310 “Tahiti Sea Level” aimed to recover the coral reef record of the last deglacial sea-level rise in the South Pacific. During this Mission-Specific Platform (MSP) Expedition, more than 600 m of cores with an exceptionally recovery were retrieved from 37 holes drilled into the drowned reefs around the island of Tahiti, in water depths between 41 and 117 m. A total of 30 m of the reef cores consist of massive coral colonies, mostly of the genus *Porites*. The aragonitic skeletons of such annually-banded corals provide the unique opportunity to study changes in seasonality and interannual climate variability in the South Pacific that might have occurred during the last deglaciation. Sub-seasonally resolved records of oxygen isotopes and Sr/Ca derived from well-preserved and well-dated (U-series dating) coral skeletons will provide reconstructions of variations in temperature and hydrologic balance at the sea surface. Here we present preliminary results of sub-seasonally resolved coral records from Tahiti for selected time windows during the last deglaciation. Comparing such coral-based climate reconstructions of periods with boundary conditions different from today with state-of-the-art climate model simulations might also help to assess the validity of future greenhouse projections.