



## **Tropical Pacific climate during Meltwater Pulse-1A from IODP Expedition 310 corals**

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IODP Expedition 310 'Tahiti Sea Level' has provided important insights into ice-sheet collapse and sea-level rise at the Bølling warming 14,600 years ago, by constraining the amplitude and timing of meltwater pulse (MWP) 1A. Furthermore, geochemical proxies in IODP Expedition 310 corals have provided insights into past changes in seasonality, interannual variability and mean conditions in tropical Pacific sea surface temperature during the North Atlantic cold episodes of the Younger Dryas and Heinrich Stadial 1, revealing Younger Dryas cooling and pronounced interannual variability at typical ENSO periodicities during Heinrich Stadial 1 at Tahiti. Importantly, U-Th dating indicates that a noticeable number of *Porites* corals partly analysed at monthly resolution for the Sr/Ca and  $\delta^{18}\text{O}$  temperature proxies grew during MWP-1A. However, the paleoclimatic and paleoceanographic interpretation of these coral proxy records had been hampered by (1) the relative shortness of most of the records, (2) presumably subtle diagenetic alteration of the skeleton in some corals apparently affecting the performance of the temperature proxies in resolving clearly the annual cycle, and (3) the lack of a sufficient number of modern monthly coral Sr/Ca and  $\delta^{18}\text{O}$  records from Tahiti in order to provide a robust present-day benchmark. Here we suggest to provide unique insights into past changes in seasonality, interannual variations and mean conditions of tropical Pacific sea surface temperatures during MWP-1A, by using a new collection of modern Tahiti *Porites* corals from the vicinity of the Expedition 310 drill sites, and Expedition 310 *Porites* corals. The results will provide snapshots of tropical Pacific temperature variability at unprecedented temporal resolution during a period of dramatic sea-level rise and abrupt climate change of the last deglaciation.