

Variations of components in fossil corals collected from Tahiti by IODP Expedition 310

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Integrated Ocean Drilling Program (IODP) Expedition 310 to the reef terraces around Tahiti, French Polynesia was conducted for the purpose of establishing the course of postglacial sea level rise at Tahiti and to define sea-surface temperature (SST) and marine environmental variation for the region over the period 20-10 ka. In this expedition, fossil corals have been collected. Coral skeletal geochemistry, such as oxygen isotope, Sr/Ca and Ba/Ca, has a potential as proxies for marine environments including SST and upwelling. Therefore, key information for better knowledge of climatic conditions in tropical regions during the last deglaciation could be obtained using well preserved fossil corals.

First of all, in this study we investigated conditions of fossil corals using X-ray diffraction and selected samples composed of only aragonite. Dating of fossil corals were determined based on ^{14}C method by accelerator mass spectrometry (AMS). All coral specimens were sub-sampled along the major growth axis by a milling machine using X-ray photo as a guide. Then, trace elements in sub-samples were analyzed by ICP-MS. Variations of climatic conditions depending on the date deduced from coral geochemistry will be discussed.