High Resolution Reconstructing Palaeoclimates in Tropical and Sub Tropical Regions using Stable Isotopes and Trace Elements in Biogenic Carbonates

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My recent scientific interests are to reconstruct palaeoclimates in the tropical and sub tropical areas using geochemical tracer of biogenic carbonates including coral skeletons and molluskan shells, which have annual and daily growth bands. Understanding the past climate variability in the tropical ocean is a high priority in climate change research. The tropical climate variability has global consequences such as El Niño-Southern Oscillation (ENSO) and Asian-Australian monsoon but the instrumental records in this area are limited only up to past several decades. Recently the oxygen isotopic and trace elemental records of living and fossil coral skeletons have provided the seasonal variations of sea surface temperature and precipitation in the tropical oceans over several hundred years. Despite such a great advance, there still remain problems to use coral skeletons for reconstructing palaeoclimates because of their biological and physical processes. I would like to present recent our results of geochemical tracers in aragonitic skeletons of coral reefs dwellers which have different skeletal structures and growth rates in order to access these problems and robustness as palaeoclimate recorders.

References
Giant clams

Caribbean corals

Indo-Pacific corals