

## The reconstruction of sea surface temperature of the tropical western Pacific based on a 220-year coral record

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In the tropics, *Porites* corals are recognized as the excellent archives of past climate and environmental and oceanic conditions because coral skeletal geochemistry, such as oxygen isotopes and Sr/Ca ratios, provides quantitative information on sea surface temperature (SST) and salinity. Based on this principle, coral skeletal climatology has successfully applied to reconstruct interannual variability of tropical to subtropical climate. However continuous long records more than 200 years reconstructed from corals have been limited.

Here we present a seasonal reconstruction of SST from 1778 to 2002, based on a *Porites* coral Sr/Ca record which is considered to be a good proxy for SST. The coral sample was collected in 2002 from the eastern coast of the Philippines. Coral Sr/Ca was measured by an inductively coupled plasma optical/atomic emission spectrometer (ICP-OES/AES) with a precision was better than 0.6% which is equivalent to 0.6°C. Reconstructed SST varies from 25 to 32°C and shows that there were multiple cold events occurred during the last 220 years in the western tropical Pacific. In this presentation, we compare the reconstructed SST record with other records such as global air temperature and/or volcanic eruptions to understand the mechanism of climate systems in the tropical western Pacific.

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