Reconstruction of sea surface temperature over 50 years using coral Sr/Ca ratios from Seribu Island, Indonesia

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The Indonesia archipelago is located between the Pacific and the Indian Ocean where is important place for the study of climate changes related to El Niño/Southern Oscillation (ENSO), Asian monsoon and/or Indian Ocean Dipole. However, instrumental and observed records such as water temperature and salinity has not been reported enough to understand climate systems around the Indonesian seas. Then, in this study, we have reconstructed sea surface temperature (SST) for more than 50 years from Sr/Ca ratios in a coral core collected from Seribu Island, Indonesia. Measurements of Sr/Ca ratios were performed by ICP-OES with monthly resolution and precision (RSD) was better than 0.3%. Based on the temperature records reconstructed by coral Sr/Ca ratios and time-series analysis, relationship between SST and climate events around Indonesian seas will be discussed.

