A 70 years changes of the Java Sea surface condition based on geochemical analyses of a coral core

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At Indonesian Archipelago, observed and instrumental records have not been well recorded because of complex terrain. In this study, we have reconstructed sea surface condition of the Java Sea for past 70 years based on δ^{13} C, Sr/Ca and U/Ca ratios in the coral skeleton.

A coral core (*Porites* sp.) was collected from the the Seribu Islands located at the Java Sea, Indonesia. Measurements of Sr/Ca, U/Ca ratios and δ^{13} C were performed by inductively coupled plasma (ICP)-optical emission spectrometer, ICP-mass spectrometer and stable isotope ratio mass spectrometer with about 2-month time resolution.

Although it has been reported that both coral Sr/Ca and U/Ca ratios can be used as paleothermometer [Beck et al., 1992; Min et al., 1995], coral U/Ca ratios also depends on seawater pH [Inoue et al., 2011] and carbonate ion concentration ($[CO_3^{2^-}]$) [Anagnostou et al., 2011]. Furthermore, since coral δ^{13} C reflects DIC of ambient seawater, we will discuss about marine environments such as water temperature and seawater pH at the Java Sea for 70 years.