

Annual dust flux reconstructions based on Helium-4 from a 130-year *Porites* coral record from Chichijima Island, Japan

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Abstract

Inspired by a North African dust flux reconstruction based on ⁴He concentrations from a Cape Verde coral, we plan to start a collaboration with Dr. Atsushi Suzuki from the Geological Survey of Japan who offers us the unique chance to sample a coral core slab of an annually banded *Porites* coral from Chichijima Island south of Japan at his lab. This is a unique opportunity to generate an annual dust flux record from East Asia based on terrestrial ⁴He fluxes for the last ~130 years in a region where reliable dust flux records of the last ~100 years are only available from instrumental and ice core data. We will compare our ⁴He flux record with instrumental and ice core dust data from East Asia to test the application of coral ⁴He fluxes as a dust flux proxy. We will further compare our record with published climatic records from the same coral and with instrumental climatic records from the Ogasawara Islands to study the correlation of westerly wind and dust flux changes, the influence of major climatic events like Pacific Decadal Oscillation (PDO) and El Niño-Southern Oscillation (ENSO) on dust production in East Asia and the efficiency of wet deposition of dust at this site.