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Last Interglacial paleoceanography recorded in Porites corals from Hateruma Island, Japan.

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Well preserved fossil Porites corals were recovered from Hateruma Island, Japan to investigate paleoceanographic environments of the Western Pacific region. The corals were sampled from the Last Interglacial reef complex on the Island when sea-levels were 4-6 m higher than they are now. We present analytical results for d18O and d13C to reconstruct past hydrological settings in this region. The island is located in the Kuroshio pass and hence d18O is sensitive to changes in the ocean circulation patterns and/or precipitation in the Western Pacific. Four large Porites coral heads with growth rates ranging from 8mm/yr to 13mm/yr were analyzed for stable isotopes. Continuous records of 10 years or longer were recovered from each coral and the results compared to those previously reported from a similar modern reef currently growing at Ishigaki Island located nearby. Seasonal variations in d18O for the fossil corals are greater than those from the Ishigaki corals suggesting enhanced seasonal insolation in the northern hemisphere during the Last Interglacial.

This is consistent with previously reported results from the fossil reefs at Yonaguni Island (Suzuki et al., 2001). The d18O variations in Hateruma Island corals are likely to be mainly due to differences in the ocean circulation patterns of the Kuroshio current rather than to differences in local precipitation or climate.

Keywords: coral, paleoclimatology, palaeoceanography, stable isotope, trace element