Long-term coral B/Ca and $\delta^{11}B$ records in the central Indian Ocean

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The increasing input of anthropogenic CO_2 in the atmosphere since the initiation of the Industrial Revolution may cause ocean acidification by elevating seawater CO_2 partial pressure. This acidification could have direct impacts on marine ecosystems and human economics; therefore, it is critical to know how the ocean chemistry will respond to elevated CO_2 in the air. However, anthropogenic CO_2 is not evenly distributed among the ocean basins, and direct measurements of seawater pH are sparse. It is still unclear how much seawater pH has been affected at different geographic locations and through time. Hence, proxy records are essential to compensate the lack of such information.

Boron isotopes of coral *Porites* have been successfully applied to reconstruct seawater pH in the past, although the results are mostly from the Pacific region. Here we analyze B/Ca and $\delta^{11}B$ of a 30-year-long coral *Porites* archive collected from the southern Maldives to reconstruct the regional seawater carbonate chemistry in the historical past. The results provide the first long-term seawater pH and DIC records for the central Indian Ocean. We also compare the boron results with the coral $\delta^{18}O$ and Sr/Ca values to evaluate the potential contribution of the Indian Monsoons on local seawater pH and DIC. The results can help us better understand the regional variation of seawater carbonate chemistry in response to the elevated CO_2 in the atmosphere.