

Calcification mechanisms in foraminifera and proxy incorporation

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Calcifying organisms, such as pteropods, bivalves, corals and foraminifera provide a rich resource for pale-oceanographers and climatologists because their geochemical make-up (proxies) can be used to reconstruct past ocean history and evolution during and after natural carbon perturbations. However, it has been shown for all geochemical proxies that the main assumption of only one environmental variable controlling a target proxy is too simple. Empirical calibrations introduce a lot of uncertainty because the mechanisms of proxy incorporation are not well understood. The major problem is that the calcification mechanisms are still a black box. In this presentation I will review our current understanding of calcification and proxy incorporation in foraminifera, specifically with respect to the impact of carbonate chemistry and the new opportunities arising from this.

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