

Biomineralization as the basis for understanding proxy incorporation

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A mechanistic understanding of element transport and incorporation into calcifying organisms is the basis for translating empirical proxy relationships into robust tools for paleo-reconstructions. Not only will it allow us to better understand the functional link between a target parameter and its geochemical signal but it will also unveil potential interactions with other biotic or physicochemical processes.

There are currently two models proposed for the biomineralization in Foraminifera that are fundamentally different but maybe not mutually exclusive. One model, is based on vacuolarisation of seawater while the other model (Trans-Membrane Transport model) is based on active pumping of Ca^{2+} ions during chamber formation. I will introduce the TMT model and discuss it in the context of additional, mostly experimental, data that has been generated over the last 30 years.

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