

The variable ambient pH during chamber formation process of benthic foraminifera

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Some of major studies recently showed that calcifying marine organisms respond differently to ocean acidification (OA). Prediction of OA impact is getting tangled by this variability. Moreover, this complicates modelling future ecological cycles. Carbon usage is key to understanding calcification and hence understanding impact of OA. Using fluorescent techniques to visualize pH gradients, this shows foraminifera actively pump protons to promote passive CO₂ uptake. This appearance the basis of calcification and effectively support carbon uptake independent from seawater pH. The resulting fundamentally new calcification model has major implications for understanding past changes in atmospheric CO₂ as well for predicting future CO₂.

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