
[EE] Evening Poster | B (Biogeosciences) | B-PT Paleontology

[B-PT04]Biomineralization and the Geochemistry of Proxies

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Biomineralization and the Geochemistry of Proxies - Biology, laboratory culture-experiments and their applications to the paleo-research -

In order to reconstruct the Earth climate system, marine paleoclimatologists resort to transfer functions or geochemical proxies, which are produced or affected by organisms. The relationships used for reconstructions are generally based on field calibrations or derived from laboratory experiments. The danger of these so-called empirical relationships is that they may be valid only within the restricted parameter space of their calibration. Application of proxy relationships to very different environmental settings (e.g. high vs. low latitude or glacial vs. interglacial) requires a mechanistic understanding of these relationships. Much progress can be expected by a better understanding of the biomineralization mechanisms and the incorporation of proxy signals.

In this session we facilitate contributions related to the biomineralization, calibration and validation of marine proxies from field study, laboratory culture experiment and paleo-environmental reconstruction.

[BPT04-P01] Discussion in terms of relations between test Bauplan and ecology of foraminifer

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Foraminifers secrete either calcareous or agglutinated shells. Basically, foraminiferal shape is defined species specific test morphology, composition and structure. Attached foraminifers show flexible test shapes according to ambient environments. Groups of highly flexible test morphologies call "highly morphological plasticity group". Foraminifers are one of groups of high test plasticities. Among foraminifers, groups of high morphological plasticity are tend to take specific ecological characters. For instance, foraminifers that are attached on hard substrates show flexible test shapes. Some attached foraminifers that should get attached hard substrates with other organisms are commonly show high growth rates. The group show specific growth strategy. These relations between foraminiferal test plasticity and growth patterns give essential questions to think about what is test morphology in foraminifers.