

Interactive comment on “From laboratory manipulations to earth system models: predicting pelagic calcification and its consequences” by A. Ridgwell et al.

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1. We appreciate the Referee's known keen interest in the 'other' pelagic calcifier (although also then ignoring pteropods ...) particularly with respect to the title. We have therefore changed the title to make it somewhat more generic. With respect to the role of foraminifera – we have now included some initial discussion about pelagic calcification in general and how this breaks down into coccolithophores, foraminifers, etc and throughout; make it clear that we are focussing on a single element of this in the paper (i.e., coccolithophores).

2. [See answer to overarching points.]

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3. [See answer to overarching points.]

4. The Referee recommends inclusion of a brief discussion regarding carbonate chemistry. Although anthropogenic perturbation of ocean carbonate chemistry and its consequences is the topic of the special issue of Biogeosciences and so should be adequately covered, we have added a new short initial paragraph setting the geochemical background to the problem. Regarding the potential analogy between fossil fuel CO₂ release vs. glacial-interglacial changes in the open ocean, and CO₂ bubbling vs. acid/base titration – we have now included something along these lines to the 'Conclusions & perspectives' section.

5. We have included a statement clarifying the effect of the two different carbonate manipulations along the lines suggested. With regards to demonstrating the effect of targeting a specific pH – Table 2 does in fact already include a comparison between CO₂ bubbling and acid/base titration to match the pH change due to bubbling (in addition to a comparison on the basis of matching pCO₂). We feel this is sufficient and effectively already meets the Referee's request. However, we have now made the contents of the table clearer and more explicit in the text.

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