

Interactive comment on “The combined impact of CO₂-dependent parameterisations of Redfield and Rain ratios on ocean carbonate saturation” by K. F. Kvale et al.

Anonymous Referee #2

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Review of "The combined impact of CO₂-dependent parameterizations of Redfield and Rain ratios on ocean carbonate saturation", by Kvale et al.

Overall, I found the article to be very interesting in the scientific questions it addresses, and the simplicity of the modeling approach is attractive and appropriate to the science question. The most important limitation of this study is that the authors do not provide any evaluation of their model against available data or data products. This is a serious deficiency, especially given the wide public availability of data collected over the last several decades. The authors could either consider individual comparisons with sections for the major basins, or gridded distributions from data products.

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Another limitation of the study is that the scientific context for the parameterizations introduced needs to be more fully developed, and justified. In the "Summary and Conclusions" section, the authors refer to several previous studies within the context of these results. I believe that the paper would be strengthened by modest restructuring, with a few additional paragraphs in the introductory section describing more specifically what kinds of issues arise in the real ocean (science context), what the unresolved problems are, and why the parameterizations proposed here are appropriate.

With these changes, the paper will be of broad interest and appropriate for publication in Biogeosciences, and I recommend that it be published with minor revisions.

Interactive comment on Biogeosciences Discuss., 8, 6265, 2011.

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