

Interactive comment on “Interannual variability of pteropod shell weights in the high-CO₂ Southern Ocean” by D. Roberts et al.

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Dear Dr. Roberts,

thank you for your reply to the referees' comments. As highlighted by both referees, your manuscript provides extremely valuable in situ data of pteropod shell weight in an area of the ocean which may prove particularly vulnerable to ocean acidification. Undoubtedly, this dataset will serve as an important benchmark against which future change in pteropod shell weight can be measured and related to changing environmental conditions. As emphasized by referee #2, however, I am afraid the data set is not suited to draw a reliable conclusion regarding a temporal trend in the shell weight of *Limacina helicina antarctica forma antarctica* (LHA-A). Also, considering the many factors which may have contributed to the interannual variability in LHA-A shell weight,

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it appears premature to conclude on the possible role of ocean acidification as a driver of this observed variability.

The revisions you have proposed in your response to the referees' comments in my view will not eliminate uncertainties in the data interpretation as outlined by referee #2 and will not circumvent the inherent difficulties in relating these findings to the on-going process of ocean acidification. I am sorry to let you know that the manuscript therefore cannot be considered for publication in Biogeosciences.

Should you decide to rework the manuscript with the primary intent of providing a benchmark data set against which future change in pteropod shell weight can be measured, you are more than welcome to resubmit the manuscript to Biogeosciences as part of the special issue "The ocean in the high-CO₂ world II". In this case your manuscript would have to be seen again by the previous referees and possibly a third referee before it can be considered for publication. Feel free to contact me should you have any questions in this regard.

I am sorry I can't give you a positive decision at this point.

Please let me know how you decide to proceed.

Best regards, Ulf Riebesell

Interactive comment on Biogeosciences Discuss., 5, 4453, 2008.

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