Biogeosciences Discuss.,
https://doi.org/10.5194/bg-2018-77-RC1, 2018

Biogeosciences Discussions

Interactive comment on "Reviews and syntheses: Revisiting the boron systematics of aragonite and their application to coral calcification" *by* Thomas M. DeCarlo et al.

Anonymous Referee #1

Received and published: 18 February 2018

I really enjoyed reading the manuscript. The authors summarized issues on the selection of Kd value (and its formula) and its potential influence on the calculation of full carbonate chemistry in the calcifying medium. The logic is concise, and I strongly recommend a publication of the manuscript.

The followings are my minor comments that may be helpful for the authors to improve the manuscript.

(pp. 2 Line 20–) I think almost nobody use stable carbon and oxygen isotopes as a proxy of carbonate chemistry, so you can delete the related sentences.

(pp. 7 Figure 2 and pp. 14 Figure 8) About pH and [H+]. I think [H+] presented in the

Figure 2 is that of solution used in the precipitation experiment. In Figure 8, on the other hand, they are calcifying fluid pH for coral data as well as solution pH for precipitation experiment. I would be better to clarify what each pH stand for in somewhere in the manuscript (in each figure caption?).

(pp. 10 Figure 4) Why do you use Kd value of 0.002 as an example of constant Kd?

(pp. 12 Figure 6) Is there any better way to plot these data? The difference between New Eq. (12) line and Allison (2017) line are very ambiguous.

(pp. 14 Line 17- pp. 15 Line 2) It is just a question. Is this the reason why you don't show a cross-plot of Ωar against the other parameters? (such as Ωar versus pH)

Interactive comment on Biogeosciences Discuss., https://doi.org/10.5194/bg-2018-77, 2018.