

## ***Interactive comment on “Vanishing coccolith vital effects with alleviated CO<sub>2</sub> limitation” by M. Hermoso et al.***

### **Anonymous Referee #3**

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The work by Hermoso et al. is a valuable contribution to the complex field of carbon and oxygen isotope fractionation in coccolithophores. The multi-species approach is particularly helpful and besides providing much needed insights, raises, as is so often the case, many additional questions. This is not a bad thing, of course, and I appreciate the author's attempt to tackle some of them in considerable detail. However, I think that sections 4.2.1 and 4.2.2, although a nice exercise, bring little to the table in terms of the central section on proxy development (4.3). Moreover, section 4.2.1 for instance uses the PIC/POC ratio as one important parameter in the argument. But in the present study PIC/POC was not determined. So I feel that such highly conjectural sections (4.2.1 and 4.2.2) take too much space and could be shortened considerably. Concerning DCUt, I would suggest keeping it as it is used in section 4.3. Thanks to the thorough comments by the other reviewers there is not much left to say, from my

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point of view. I will merely highlight a few technical points which might even have been mentioned by the others (if so sorry for that). 1 Please state explicitly which parameters of the carbonate system were used to calculate it, and how it was calculated. 2 Give the full carbonate chemistry in a table (and preferably the other data as well) 3 How many replicates were run? 4 It would be helpful to have a figure showing cell density on y and time on x as an illustration of the semi-continuous approach 5 In section 3.3 you say that you used coccosphere size as opposed to (naked) cell size. Actually, your Coulter Counter measurements are probably much closer to naked cell size than to coccosphere size. This type of machines is hardly capable of “seeing” the coccosphere.

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Interactive comment on Biogeosciences Discuss., 12, 15835, 2015.

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