

***Interactive comment on “Ocean acidification does not affect magnesium composition or dolomite formation in living crustose coralline algae, *Porolithon onkodes* in an experimental system” by M. C. Nash et al.***

**Anonymous Referee #1**

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This manuscript evaluates the potential impact from ocean acidification on the incorporation of  $\text{MgCO}_3$  in a widespread tropical coralline alga using an experimental setup. For the duration of the experiment no significant effects of  $\text{pCO}_2$  changes on  $\text{MgCO}_3$  were detected, leading the authors to conclude that the particular alga studied will continue to form dolomite infilled cells, and will therefore retain its resistance to dissolution at least over the short 6 months duration of their experimental setup. The manuscript is very well written and extensively discussed, organized in a logical manner, and based on a thoroughly established dataset.

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Hence, I have really only one comment and once that is integrated, the manuscript is in my opinion ready to be moved into Biogeosciences.

The authors repeatedly talk about a pink and white crust, and sometimes also about 'old growth as a white crust' and 'new white crust'. Only once, at the beginning of the discussion, they relate the above terms to more standard coralline algal terminology (epithallus the actively calcifying pigmented uppermost layer; and perithallus the underlying calcified structure). This can be confusing to the reader and I would suggest to use the algal terminology throughout, and label it either on figure 1 (by the way, this figure doesn't have a scale) or on an adjacent drawing. Also the authors should add a brief description on how the white crust is formed (e.g. calcification at the meristem or from the pink crust after it loses its pigmentation? Does the pink crust commonly get grazed down or is it subject to what has been referred to as epithallial sloughing (e.g. will it flake off?). Also the distinction of old and new white crusts is a bit unclear, I assume it refers to pre-experimental and experimentally formed crust. If so, how can you distinguish them (by the way the saw cut or did you apply some kind of a stain at the initiation of the experiment?).

Typos: p. 1374 Line 12 settlement was affected p. 1385 Line 21- is not abundant p. 1390 Line 9 - mean

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**BGD**

12, C484–C485, 2015

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