

## ***Interactive comment on “Calculating the global contribution of coralline algae to carbon burial” by L. H. van der Heijden and N. A. Kamenos***

**Anonymous Referee #2**

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Review of the paper “Calculating the global contribution of coralline algae to carbon burial” by L.H. van der Heijden and N.A. Kamenos

The paper by van der Heijden and Kamenos presents a compilation of studies/results reporting production and storage/burial of carbon by coralline algae. I admire the extent and detail of the work to gather the available information. Based on their data base the authors extrapolate to the global scale in order to estimate the role of coralline algae in the global marine carbon budget and relate their findings to other marine ecological environments.

While there is doubtless need for such an endeavour, the paper appears closer to a data report, despite the fact that the global extrapolation reaches clearly beyond a pure data report. I do not think that the paper as such is appropriate for publication in

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Biogeosciences.

Some more detailed comments:

It remained unclear to me whether and if so, to which extent deep water corals do play a role here. I did not find (or overlooked) an explicit statement on those, although potential regions are depicted on the map? Please expand on this matter.

Page 7847, line 1: please update this reference, atmospheric pCO<sub>2</sub> has crossed the 400ppm mark.

Page 7850, line18: why “approximately” 1 mole? Why not 1 mole?

Page 7851, line 11: please be clarify: Precipitation of 1 mole (!) CaCO<sub>3</sub> ....

Page 7851, line 12: the unit for alkalinity is mole, “equivalents” have been decommissioned decades ago!

Page 7851, lines 20-21: this statement is unclear to me? What the relation between export, preservation and the given figures?

Page 7852, lines 1-2. what has temperature limitation to do with supersaturation? The surface oceans are everywhere supersaturated, except for in region where salinity is lower (brackish, or polar environments). Please delete or rephrase this statement.

Page 7855: it is not so much a question of pCO<sub>2</sub> (or pH), it is the carbonate ion concentration with primarily matters here. Please reword accordingly.

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Interactive comment on Biogeosciences Discuss., 12, 7845, 2015.