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Biogeosciences Discussions

Interactive comment on "CO_2 perturbation experiments: similarities and differences between dissolved inorganic carbon and total alkalinity manipulations" *by* K. G. Schulz et al.

Anonymous Referee #2

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General comments: This paper compared the changes of carbonate system among different ocean acidification experimental approaches since there are several ways to achieve targeted pH/pCO2, and summarized published results for Emiliania huxleyi. It is useful for understanding the data published before using different approaches to control CO2/pH levels, though the responses of this organism to ocean acidification were similar despite of the approaches used. As this paper argued, changing TA while keep DIC constant is not the best way to mimic the future chemical changes in seawater when pCO2 increases, thus could hide the real biological responses in other organisms to OA. Since it can be a guide for researchers who work on OA to choose feasible approaches, I would like to recommend it for publication.

Specific comments

P11: The fifth line from the bottom, the biological activity during culturing is an important factor in affecting carbonate system, thus, it's better to give some specific information about cell density or biomass etc. that should be controlled at a certain level during culturing (e.g. Shi et al. suggested POC less than 50 μmol L-1 in BGD 2009)
P13: the last sentence should be reworded or deleted since "no systematic differences" is only for Emiliania huxleyi, and here might misleading for reader that other species with similar responses to different OA approaches.

Interactive comment on Biogeosciences Discuss., 6, 4441, 2009.