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Biogeosciences
Discussions

Interactive comment on "Isotopic fractionation of carbon during uptake by phytoplankton across the South Atlantic subtropical convergence" *by* Robyn E. Tuerena et al.

Anonymous Referee #1

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1/ A further comment conecerning the following reply of the authors (page C7):

"Although an increase in temperature in the ïňĄgure shows an increase in δ13CPOC and a decrease in ep, this will have very little effect compared to the predicted changes in carbon availability and cell size. "

I suggest authors make this future change (decrease) in d13CPOC more visible to the reader by marking it in Figure 9b. For example they could mark the jump from the 400 ppm to the 500ppm level with inceasing temperature by an arrow.

2/ In their reply on the question about the latitudinal distribution of d13C-DIC, the authors don't really clarify the issue, I believe. Of course Southern Ocean d13C-DIC is

very low because of upwelling of deep ocean waters depleted in 13C-DIC there, a phenomenon not present in the North Atlantic. So I feel the question about which process really imposes lower d13C-DIC in the North Atlantic is not satisfactorily resolved by their reply. Admitedly this is not the subject of their paper.

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