

Review comments for “Particulate trace metal dynamics in response to increased CO₂ and iron availability in a coastal mesocosm experiment”.

The authors have improved this manuscript with addressing my comments. My serious concern is mostly resolved. However, the authors did not resolve all of my concerns. I still find several points which need to be improved before publication.

I have read this version of manuscript carefully, and I still feel that explanation of statistically analysis for Table 1 is not kind for reader. Why author do not describe following information in the text or caption of Table 1?

“We used all the days because we performed a Split-Plot ANOVA (or mixed model) which integrates fixed factors (Co₂ and Fe) and a repeated measures factor (time) by using the posthoc Bonferroni, saying that the statistical treatment was a split-plot ANOVA+Bonferroni, compulsory means that time was fully considered during the whole experimental period.”

They have made the response only to reviewer’s comments. This information is very important for reader’s understanding that how the statistically analysis have done.

Line 125 “By day 17,……and/or the addition of DFB (Chen et al., 2004).” Increased dissolved Fe by adding DFB is bioavailable? Is DFB-Fe can be detected by CL-FIA which described in Segovia et al., 2017? Strong chelate like DFB prevent dissolved Fe detection measuring by resin preconcentrate-CL-FIA measurement system. It should be made clear that which chemical species do authors describe as for dissolved Fe in this study (Is DFB-bounded Fe included in this dissolved fraction, or not?). Also, it is necessary to clearly describe how do authors think about that how the availability of iron was changed by adding DFB. Some previous studies indicate that DFB-bounded Fe is not available, as authors described in the text. Is DFB-Fe available for E. Huxley? If so, please indicate a reference. Or, do adding DFB induce other chemical species of dissolved fraction? Author should describe this aspect clear, because this point is very important for this study.

Line 130-132, “Water samples from……onshore laboratory.” This sentence should be moved in section 2.3.1. Authors should indicate manufacture and model information for the “vacuum pump”.

Line 145, “for this very experiment.”. What is “very”.

Line 155, Authors should indicate the type of “Filters”. Is this also AcroPac Supore, but membrane type?? Size??

Line 158, “without manipulation” should be changed to “without oxalate-EDTA wash”.

Line 164, Authors should indicate material and volume of “centrifuge tubes”

Line 178, blank value should be appeared in the Supplemental material such as S-Table 1.

Line 215-216, “This diatom bloom was associated with a sharp decrease in nitrate and silicate acid concentration”. I think this is not correct. Why nitrate decrease with diatom decreasing? Silicate have not sharp decreased during diatom decreasing.

Line 327, “Figure 4” should be changed “Figure 3”.

429-430, “promoted a massive bloom of E huxley in the treatment with ambient CO₂, due to increased dissolved Fe”. It should be made clear that which chemical species do authors describe as for dissolved Fe in this study (Is DFB-bounded Fe included in this dissolved fraction, or not?). Some previous studies indicate that DFB-bounded Fe is not available, as authors described in the text. Is DFB-Fe available for E. Huxley? If so, please indicate reference. See comment above too.

Line 435-436, “The decrease in particulate Fe may···· in open ocean setting.”. Delete this sentence. This is not a conclusion from this study. No data from this study indicate this.

End of review.