

Interactive comments on ‘The Arctic picoeukaryote Micromonas pusilla benefits synergistically from warming and ocean acidification’ by Clara J.M. Hoppe et al.

General comments

I think that the manuscript is already there, and it deserves to be published. The manuscript is well written, well structured and clearly concluded. I only have a few comments.

Line 97: Please provide the (mean) seasonal CO₂ levels and temperature range in the sampling location.

Line 167: Please show the unit in ‘ $\mu\text{mol photons m}^{-2} \text{ s}^{-1}$ ’.

Line 309: Please add ‘and nutrient uptake’ after ‘enzymatic reactions’.

Lines 336-342: Sett et al. (2018) reported that high CO₂ and warming increased the percentage of larger diatom species in indoor mesocosm experiment with nutrient-replete conditions. Wu et al. (2014) reported that rising CO₂ showed larger positive effect on growth rates of large diatom species than small diatom species. Please compare your results with the data of Sett et al. (2018) and Wu et al. (2014).

Lines 451-452: Please delete ‘(e.g. due to higher turnover rates of RuBisCO)’.

Table 3 in page 26: Please change ‘ETR_{max}’ to ‘rETR_{max}’.

In figure legends in pages 27 and 28 : Please exchange the ‘open’ and ‘filled’. As I seen, ‘open symbols’ represent high temperature, and ‘fill symbols’ represent low temperature in figures 1 and 2.

Reference

- Wu, Y., Campbell, D.A., Irwin, A.J., Suggett, D.J., Finkel, Z.V., 2014. Ocean acidification enhances the growth rate of larger diatoms. *Limnol. Oceanogr.* 59, 1027–1034.
- Sett, S., Schulz, K., Bach, L.T., Riebesell, U., 2018. Shift towards larger diatoms in a natural phytoplankton assemblage under combined high CO₂ and warming conditions. *J. Plankton Res.*

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