

***Interactive comment on “Ocean acidification and high irradiance stimulate growth of the Antarctic cryptophyte *Geminigera cryophila*” by Scarlett Trimborn et al.***

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This is an excellent and novel contribution reporting on experiments of the interaction between light intensity and ocean acidification on aspects of the growth and physiology of an Antarctic cryptophyte. Since information on Southern Ocean cryptophytes is limited, especially with regard to the effects of elevated CO<sub>2</sub>, the current contribution is especially welcome. The main take home message is that elevated CO<sub>2</sub> allows growth at high light, which under present day CO<sub>2</sub> levels would be inhibitory (non-permissive) to growth i.e. increased CO<sub>2</sub> alleviates photoinhibition.

The data presented are thorough and well-presented. The reasoning put forward to

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explain the data is carefully thought through and although I was surprised that the effects of OA were not apparent under medium high levels, I was persuaded by the arguments of the authors that this might be related to costs of increased N metabolism under those conditions.

I have no major criticisms to offer. One minor point is on the last line of the results (page 7 line 9) - where the authors state "...much higher NPQ values were determined in the ambient pCO<sub>2</sub> relative to the OA treatment." should this be followed by "in the LL treatment"?

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