

## **Point by point rebuttal**

**Referee 1:** All suggestions and corrections I have made (and the other referee) have been appropriately addressed and integrated, the manuscript being updated accordingly.

This paper should be of interest to marine microbiologists who investigate how phytoplankton modulate their lipid membrane under Phosphate limitation and who wish to understand how green algae respond to a collection of stresses: nutrient limitation/starvation, viral infection and carbonation. I support publication of this paper in Biogeosciences.

Minor corrections: I am still surprised to see that many typos that should be corrected long before final publication. e.g. l.61 limitation growth of what?; l.121 in parenthesis; l.142 flow cytometry in two words; l.164 in parenthesis and weird numbers; l.321 period; FigS1, l.8 p-value superior and inferior.....please proof-read for a nice last version of the article.

*We are pleased to hear that we were able to address all the suggestions and comments of the referees. We apologize for the large number of typo's. We have carefully checked the manuscript and corrected the typo's that were pointed out by the referee (underlined in text below) out as well as others and updated the reference list.*

*Page 2, line 38: changed position of article 'the'*

*Page 3, line 60-62: changed sentence into: 'A widespread and important phytoplankton growth-regulating factor, that limits growth in many marine systems, is phosphorus (P) availability (Cloern 1999, Dyrman et al. 2007, Moore et al. 2013).'*

*Page 3, line 66-67: changed ', hence' in to 'and thus'*

*Page 4, line 79: changed 'make out' into 'make up'*

*Page 4, line 80: changed 'community' into 'communities'*

*Page 4, line 94: added the article 'a'*

*Page 4, line 98: changed 'time to lysis' into 'time of lysis'*

*Page 5, line 116: changed 'the' into 'a'*

*Page 5, line 120: corrected parentheses*

*Page 6, line 141: separated flowcytometry (flow cytometry)*

*Page 6, line 143: added the (missing) word 'cultures'*

*Page 6, line 144: added a space after the period*

*Page 7, line 163: corrected parentheses*

*Page 10, line 248-249: Added parentheses to clarify sentence and changed position of p-value: 'The SQDGs showed a relative increase (to the other IPLs) under all levels of P-limitation as compared to P-replete (p<0.03)'*

*Page 11, line 260: removed the double word 'with'*

*Page 11, line 265: correct direction of superior/ inferior signs (0.071<p<0.623)*

*Page 12, line 294: changed '(quantitatively reflected by Fv/Fm and APA; Beardall et al., 2001)' into '(reflected in Fv/Fm and APA; Beardall et al. 2001)'*

*Page 12, line 296: changed 'substituted' into substituting'*

*Page 12, line 302: singular instead of plural of 'features'*

*Page 13, line 311: addition of article 'the'*

*Page 13, line 320: addition of period (.)*

*Page 13, line 327: removal of comma (,)*

*Page 14, line 333: addition of space between 'IPL' and 'diversity'*

*Page 14, line 344: 'produces' instead of 'produce'*

*Page 15, line 362: added missing reference (Bale 2015, Evans 2009)*

*Page 16, line 400: removed reference that was not in text (Brown 1981)*

*Page 16, line 403: removed reference that was not in text (Brussaard 2004a)*

*Page 18, line 425: added missing reference (Evans 2009)*

*Page 18, line 428: removed reference that was not in text (Graziano 1996)*

*Page 18, line 441: removed reference that was not in text (Hecky and Kilham 1988)*

*Page 19, line 446: removed reference that was not in text (Llewelyn 2007)*

*Page 20, line 484: removed reference that was not in text anymore (Muradyan 2014)*

*Page 20, line 494: removed reference that was not in text (Rengefors 2001)*

*Page 20, line 497: removed reference that was not in text (Riegman 2001)*

*Supplement line 8: correction of superior/ inferior signs: (0.071<p<0.623)*