

## ***Interactive comment on “Nitrate limitation and ocean acidification interact with UV-B to reduce photosynthetic performance in the diatom *Phaeodactylum tricornutum*” by W. Li et al.***

**Anonymous Referee #1**

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This ms. deals with the potential effect of global warming resulted in enhanced stratification, nutrient limitation and pH increase due to ocean acidification (OA). All these stressors combined with U. V radiation affect yield quantum and primary production performance in *P. tricornutum*. These stressors are probably not restricted to one species but from this one we can learn about the physiological and biochemical reactions and responds to the variables studied, the enhanced activity of oxidative stress enzymes and the capability of repairing U. V damage.

A lot of work had been done. The experiments were carried out carefully and results validated by statistics methods. In my opinion, too much data was presented, which made the results and figures hard to follow. I would suggest deleting Fig. 4, which is  
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the opposite of Fig. 2 and just mention it in 2 sentences.

Yes, substantial conclusions were reached, but the main conclusion is that what matters most - is nitrate concentrations and when combined with UV- B had an effect on chl<sub>a</sub>, resulting in less primary production etc. It seems that supply of N is more crucial than CO<sub>2</sub> for photosynthetic performance of *P. tricornutum*.

The methods are clear and anyone in the field can follow and repeat the experiments and calculations with no problem.

Other peoples work was quoted in the introduction section, and different results of various groups presented. The authors results as compared to others were discussed in the Discussion section.

The title and the abstract reflect the contents of the paper clearly.

I recommend accepting this ms.

There is a small typo correction – page 17683 first line after yield there is an n which should be deleted.

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Interactive comment on Biogeosciences Discuss., 11, 17675, 2014.