Biogeosciences Discussions

Biogeosciences Discuss., author comment AC2
https://doi.org/10.5194/bg-2021-170-AC2, 2021

Reply on RC2

Tom Hull et al.

Author comment on "Simultaneous assessment of oxygen- and nitrate-based net community production in a temperate shelf sea from a single ocean glider" by Tom Hull et al., Biogeosciences Discuss., https://doi.org/10.5194/bg-2021-170-AC2, 2021

We thank both of our referees for reviewing our manuscript and for providing helpful comments.
We feel we have addressed all of their points and the manuscript is much improved as a result.

- We have amended both the main text and the appendix to provide a more clear description of the J term and how it is used elsewhere in the paper.

- We have corrected line 234, and importantly figure 3 which had been generated with the incorrect subset of data for 40 m. This line was misleading because we use the slope of the regression for the rate rather than just using the start and end points.

Detailed comments

- Agreed, total oxidised nitrogen is a bit verbose while nitrogen on it's own suggests N_2. We have included a reference to the LoC in the abstract which should make it clear our observations are NOx.

- Line 153, We use the pressure, we've made this clear in the text.

- Line 163, "a" dropped

- Line 205, We've added "not to scale" to the caption, it's too small to see easily when drawn 1:1.

- Line 231, corrected

- Line 233, figure 3 has now been corrected as noted above. The y axis is mol m**-2**, (now changed to mmol), so there is no need to scale by the water column depth.

- Line 234, as noted above

- Line 244, moving from 7 to 8 degrees causes around a 2% change in the solubility concentration, but not necessarily in the overall oxygen flux.

- We have changed the use of productivity to production throughout

- Line 263, corrected

- Line 327, corrected

- Line 536, corrected

- Figure 1, Axis labels added and text made larger

- Figure 5, We have removed the numbers from the slopes and the gridlines, we're keen to keep this looking conceptual.

Attached is a tracked changes version of the manuscript.

Please also note the supplement to this comment:
https://bg.copernicus.org/preprints/bg-2021-170/bg-2021-170-AC2-supplement.pdf