

## ***Interactive comment on “Norwegian Sea net community production estimated from O<sub>2</sub> and prototype CO<sub>2</sub> optode measurements on a Seaglider” by Luca Possenti et al.***

### **Anonymous Referee #2**

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This manuscript provides a detailed description of how net community production in the Norwegian Sea was calculated from glider data. Sensor calibration and drift correction are clearly presented. Therefore, I think this work is helpful to future net community production studies using glider data. Overall, this manuscript is well-organized. However, there are some short paragraphs that contain only one sentence. I suggest the authors consider re-organize some of the paragraphs.

My major concern is about oxygen optode calibration. It is unfortunate that discrete oxygen samples were not collected. But I am not convinced that archived oxygen data dated back to 2000 are suitable to be used for calibration even for deep water. The

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authors may justify this by demonstrating that the changes in archived oxygen data over the past 20 years are minor. Otherwise, the most recent discrete oxygen data should be used for calibration.

One major advantage of glider is that it can survey the entire water column continuously. However, the major portion (sections 3.3-3.6) of the results section is on NCP data at an integration depth of  $z_{lim} = 45$  m (figures 14-16). This compromises the importance of using glider data.

Below are a few minor comments,

Lines 68-79, I think these two paragraphs belong to the method section.

Line 348, it should be  $k(\text{CO}_2)$  rather than  $k(\text{O}_2)$  in equation 14.

Line 609, change “a sink to” to “a sink of”

Figures 2, 3, 8, 9 Date on the x-axis is kind of misleading. It seems like Jan-04, Jan-05, etc. I think it is better to change 01/04, 01/05, . . . , 01/10 to April, May, . . . , October.

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