



Interactive comment on “Variability of the surface water partial pressure of CO₂ in the North Sea” by H. Thomas et al.

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Final response to the reviewers' comments on the manuscript entitled “Controls of the surface water partial pressure of CO₂ in the North Sea” by Helmuth Thomas, Yann Bozec, Khalid Elkalay, Hein J.W. de Baar, Alberto V. Borges and Laure-Sophie Schietecatte submitted to BIOGEOSCIENCES.

We very much appreciated the reviewers' comments, which helped improve an earlier version of the manuscript significantly. We have chosen to acknowledge this in the revised version of the manuscript accordingly. Both reviewers requested a more critical discussion of the approaches employed in our work. We have provided this discussion at various sections of the revised version as obvious from our detailed response below.

Detailed response to reviewer 1 (Johannes Paetsch):

¶ We appreciated the hint on the mismatch between title and abstract and have changed the title accordingly.

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¶ In section 3.3 (Net community production) we now have introduced a discussion of the recent studies as suggested by the reviewer.

¶ We appreciated the ideas to include a scatter plot showing observed and calculated values at the mean temperature. We have introduced a plot (Fig. 2 in the revised version) as well we a corresponding section in the text.

¶ We provided a detailed discussion section in chapter 4 of the revised version addressing the reviewer's concerns. We believe that the new section contributes to the clarification of these issues.

¶ We corrected the sign in the table. We now have an uniform sign for NCP throughout the work.

Detailed response to reviewer 2:

We appreciated the reviewer's requested for clarification of the method employed in our manuscript. We have added a detailed and critical section in chapter 4 on methodological aspects and have also included statements in the method chapter itself in order to indicate that there are issues to be considered when applying this approach in coastal waters. Together with the discussion or comparison of the NCP in section 3.3., we now believe to have clarified the points risen by the reviewer.

Interactive comment on Biogeosciences Discussions, 2, 757, 2005.

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