

Interactive comment on “The Roles of Resuspension, Diffusion and Biogeochemical Processes on Oxygen Dynamics Offshore of the Rhone River, France: A Numerical Modeling Study” by Julia M. Moriarty et al.

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Dear Reviewer #1,

Thank you for your supportive and constructive feedback, which we believe has improved the paper. The most substantial changes to the manuscript based on your review are summarized here:

1. Attention to the re-partitioning of particulate organic matter: We added a new sensitivity test that did not re-partition the organic matter in the water column. Results from this sensitivity test showed that even when resuspended organic matter was not

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repartitioned in the water column, oxygen consumption still increased due to resuspension events over timescales of days to two months (see item 5 below). Additionally, we improved the justification for our approach.

2. Clarification of the model equations and methods: We moved the supplement into the main manuscript, and more attention was given to the presentation of equations and variables.

For detailed responses to each of your suggestions, please see the supplement. All page and line numbers refer to the original submitted manuscript.

Thank you again for your review.

Best Regards,

Julia Moriarty, Courtney Harris, Christophe Rabouille, Katja Fennel, Marjorie Friedrichs, and Kevin Xu

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/bg-2016-482/bg-2016-482-AC1-supplement.pdf>

Interactive comment on Biogeosciences Discuss., doi:10.5194/bg-2016-482, 2016.