Biogeosciences Discussions

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Reply on RC3

Stella-Theresa Stoicescu et al.

Author comment on "Causes of the extensive hypoxia in the Gulf of Riga in 2018" by Stella-Theresa Stoicescu et al., Biogeosciences Discuss., https://doi.org/10.5194/bg-2021-160-AC1, 2021

Thank you for your short comment. We will rewrite the manuscript by shortening it and focussing on two main questions: 1) What was the reason for the observed extensive near-bottom hypoxia in the Gulf of Riga in 2018? and 2) Was it an exceptional event or is it a feature that could occur in the Gulf of Riga and similar basins regularly and/or even more often in the future?

We will keep the oxygen consumption estimates based on the introduced rather simple method accounting for fluxes due to physical processes, but would not enlarge this part. We consider that developing and using a numerical model is out of the scope of this manuscript. Unfortunately, the model outcomes that are freely available (e.g., from CMEMS) are not well enough simulating the oxygen dynamics in the Gulf of Riga deeper layers in stratified conditions.