Re: Destruction and reinstatement of coastal hypoxia in the South China Sea off the Pearl River Estuary" by Yangyang Zhao et al.

March 16, 2021

Dear Editor,

Thank you for your time in handling our paper. Enclosed please find our further revised MS entitled "Destruction and reinstatement of coastal hypoxia in the South China Sea off the Pearl River Estuary" by Yangyang Zhao et al.

We have fully considered your suggestions and revised the manuscript accordingly. We also have added the link to our data which is available in English.

Finally, we would like to take this opportunity to thank you and the reviewers for the comments and suggestions, which significantly improved the quality of the paper. We sincerely hope that our revision will meet the standards of *Biogeosciences*.

Sincerely,

Minhan Dai
Corresponding author
State Key Laboratory of Marine Environmental Science
Xiamen University
Xiamen 361005, China
Phone: 86-592-218-2132
Fax: 86-592-218-0655
E-mail: mdai@xmu.edu.cn

Reviewer #1 (line numbers refer to the previous version)

L212-213: Please add information on the interpolation method in the manuscript

[Response]: We have added the interpolation method as "Within the surveyed region where DO concentrations were interpolated into 0.5'×0.5' grids using the Kriging interpolation method, …" (Page 8, Lines 219-220 of our revised MS).

L265. Please add the information on the depths in the manuscript

[Response]: We have added the depths of the middle layer as "Similar to Leg 1 and Leg 2, the surface waters penetrated into the subsurface layer along the coast (Fig. 4f), likely forced by the downwelling-favourable winds (Fig. 1d) (Huang et al., 2019; Li et al., 2021), augmenting temperature and DO concentrations but bringing down salinity, particularly in the mid-depth layer from 3-5 m at nearshoremost stations to ~ 15 m at offshoremost stations (Fig. S2)" (Page 12, Lines 279-280 of our revised MS).

L337. Please clarify in the manuscript what is meant by "limited spatial extent beneath the surface plume"

[Response]: We have revised the statement as "… resulting in an offshore or westward shift of the hypoxic zones that only partly overlapped with the surface plume in terms of their localities" (Page 14, Lines 345-346 of our revised MS).

L498-501. Please rephrase the section "the potential to overwhelmingly destroy the stability of the water column".

[Response]: We have revised the statement as "on average, five out of six tropical cyclones on an annual basis had maximum wind speeds exceeding 9 m s^{-1}, which could easily destroy the stability of the water column and replenish oxygen into the bottom waters." (Page 20, Lines 482-483 of our revised MS).

Other comment:

L282. Section heading. Suggested change: "biogeochemical" instead of "biochemical"

[Response]: Accepted. We have revised the section heading accordingly (Page 13, Line 294 of our revised MS).