

I appreciated the author team answered the question very responsible, including both my review comments and reviewer 1's comments. The author has published several papers on this topic on BG, most of them are model based. Although as a pure data analysis work, the paper is kind of old style for hypoxia science overall (I guess that is why the review request of the paper was turned down by many other researchers), it still deserved being published on BG as the first piece of work compiling long-term data for PRE hypoxia. However, I think the paper has two major technique issues and should be solved thoroughly before final acceptance on BG.

- (1) Figure 1: I found that figure was used by the author team multiple times in different journals. For example:

Liang, B., Hu, J. T., Li, S. Y., Ye, Y. X., Liu, D. H., & Huang, J. (2020). Carbon system simulation in the Pearl River Estuary, China: mass fluxes and transformations. *Journal of Geophysical Research: Biogeosciences*, 125, e2019JG005012. <https://doi.org/10.1029/2019JG005012>

Figure 1 was the same as this one. That should be replot.

- (2) The data conformity and availability issue. I do not think complicated method, e.g., numerical model and machine learning system, are only solutions. Although all extrapolation of oxygen data into unobserved stations will introduce uncertainties, there has been many other advanced statistical methods to solve the extrapolation problem specially

One example is:

Obenour DR, Scavia D, Rabalais NN, Turner RE, Michalak AM. Retrospective analysis of midsummer hypoxic area and volume in the northern Gulf of Mexico, 1985-2011. *Environmental Science & Technology*. 2013 Sep;47(17):9808-9815. DOI: 10.1021/es400983g. PMID: 23895102; PMCID: PMC3823027.

I believed because the observational data availability and data quality issue in Chinese coastal community. Collecting data and processing them are all really a lot of work for one piece of publication. I was OK with reviewer's response. But the author team should really make the data available on site

The data availability statement "The in-situ observation in July 1999 and 2013-2014 will be available at a public data storage, while ..." is not acceptable for modern top research journal these days. There should be an ftp website with last access date and checked by both reviewers.

I personal felt that the data transparency issue impeded the Chinese community promote the coastal science. A real opening data will be helpful for researchers to

work together to promote the estuary-coastal ocean science to a world leading level. The Chinese community do not really lack number of papers these years, isn't it? Did hypoxia community in other parts of world learn anything from it?

- (3) The method part reads tedious in the new version and draw out the attention for the science itself. I noticed reviewer 1 challenged the data quality issue. I suggest move Line 111 to Line 125 to the supplementary.

I think all other questions are answered very well.