Revision 3 of "A numerical model study of the main factors contributing to hypoxia and its interannual and intra-seasonal variability off the Changjiang Estuary"

I want to thank the authors for their answers to my comments, and their actions they have taken in the manuscript. By removing figure 8 (in the last version of the manuscript), and adding some text which helps the reader to follow the logics of the study, it makes it easier to follow.

Despite this, I still do think that it is quite difficult to follow the logics behind the presentation of the results. This is mainly a result of the choice of figure composition and the related text, and that different timescales are mixed up (the manuscript is dealing with interdaily, intraseasonal and interannual timescales). Below I'm giving some suggestions of improvement. Some of them will be repetitions of comments in the previous round that I wish to clarify.

1. Regarding my comment number 1 on putting your study in perspective to previous studies on the same topic:

Thank you for adding the last paragraph in the introduction. To make it even clearer, you could write something like: "In contrast to previous studies on the same topic, we here address a larger number of factors driving hypoxic variability, including xxx,xxx,xxx. Additionally we address longer time scales".

Here I also have an important remark: You state in the manuscript that your study shows that sediment oxygen consumption is important for hypoxia. I think that you should be careful with this, and rather write that your model simulations **suggest** that sediment oxygen consumption is important. The reasons behind this are that your parameterization of sediment oxygen consumption is very simple (instant remineralization), and also that you have not provided a thorough evaluation of its performance. The comparison that you provide in the discussion, of your modelled sediment oxygen consumption with what has been measured in a few studies, is not enough to state this.

2. Regarding my comment on focusing on one time scale:

In my opinion, the finding in section 3.2.3 that is relevant to section 3.2.1 is about interannual variability, not intraseasonal variability. You are explaining the difference in the hypoxic extent between 2010 and 2012 by the interannual variability in frequency and severity of high wind events. Even though these act on shorter time scales, there is an interannual signal in this process. To me it sounds wrong to state that intraseasonal variability affects interannual variability. This is one of the main reasons why I find your manuscript difficult to follow. Intraseasonal variability is by definition how something varies over seasons.

On the other hand, processes that are acting on shorter time scales, such as strong wind events (and also marine primary production), can be important for the interannual variability.

In the last report I stated that I do not think that section 3.2.2 adds any new to the story. I still think that this is the case. When you look at daily timescales , you find a weaker correlation between biological rates and oxygen concentration than when looking on interannual timescales, and you use this to argue that physical processes must be important, which leads to section 3.2.3. **(Please note that when plotting daily means as you do in figure 7 you are dealing with daily timescales, not intraseasonal timescales as you state in the title of the subsection.) .**But then in subsection 3.2.3 you partly go back to interannual variability. Both in figure 9 and 10 you look at variations between years. In fact, you do not need figure 7 to argue that physical processes are important, you can already see in figure 5 (and also the budget) that there are other processes than biology that is important.

If you want to keep both timescales, you have to be clear in their separation, and also be careful to use the right terms (i.e. not interseasonal when you are talking about interdaily).

To make it simple, I would recommend to focus on interannual timescales (I think that you have a very nice story there).

3. Regarding the suggestion about including budgets for different years:

I think that I was not clear with what I meant here. The idea was that if you look into budget for different years (rather than different months), you might be able to separate the roles played by the stratification (i.e. the freshwater plume) on the vertical supply on oxygen, and on the primary production, respectively, on the interannual variability on hypoxia. I know that you have plotted the budgets for different years in figure 11. But as it is shown now it is impossible to make a link to the interannual variability of hypoxia.

Again, this is a question about what timescale you want to focus on in the manuscript. As it is now, figure 11 is about intraseasonal variability (i.e. variations over seasons).