

1. All figures should be explained in the results section. Some figures are not at all explained in the results section (Fig. 8, 9, 11 and 12) (from line 234). Please explain all the figures in the results section

Ans: The Fig. 8, 9, 11 and 12 have been explained and analyzed in the discussion section.

2. Furthermore figures should be recalled sequentially through the text. To avoid possible confusions, all the figures should be explained sequentially throughout the text. For example, Fig. 1 is cited for the first time after Fig. 2, 3 and 4 (line 140).

Ans: Fig. 1 has been cited for the first time before Fig. 2, 3 and 4 (line 73, line 112).

3. Some methodological aspects need to be clarified, mainly about the data used in the study. I suggest to add a section where the authors explain clearly the in situ data used in the study. Figure 1 should be explained in this section. In particular the time period (months and years) of the data used need to be clarified, both in the text and in the figures.

Ans: This paper has added a section to explain clearly the in situ data used in the study. (line 109-113).

4. Fig. 2: “Comparison between model results and GDEM data in August”. Are these data related to August 2010 or 2011? This part is not explained even in the text (line 108 – 112). Please clarify this part.

Ans: The model fields of SST, SSS are the monthly mean climatological simulation for 10 years. And the GDEM fields are the monthly mean climatology data. (line 115-116)

5. Fig. 3 presents a comparison between model results and SeaWiFS derived data of August 2010, while nutrients (NO₃ and NH₄) data are referred to August 2011. Why? Chlorophyll is strongly related to nutrients availability, so the authors should explain this point. Please specify the period of the data used also in the text (in the results or

add a section concerning the data sets used).

Ans: The figure of chlorophyll-a has been replaced by August 2011. And the time is coincident with the nutrients.(see Fig.3)

6. Fig.4: shows a comparison between model and observed data of NO₃ and dissolved oxygen (DO) in August 2011. While, in fig. 5 the distribution on DO is shown for September 2010. Why? If the observed data are referred to August 2011 what is the point to simulate September 2010? Maybe the authors want to relate the DO simulations to chlorophyll-a data (Fig.3), but this part is not clear. At least the authors should show the same period used for chlorophyll-a.

Ans: In the paper, a series of numerical experiments in 2010 were set up to study the influence of river discharge, wind speed and wind direction on hypoxia adjacent to the Yangtze Estuary. In fig. 5 the distribution on DO is shown for September 2010. This is to show that the hypoxic zone was appeared off Yangtze Estuary in 2010. And the figure of chlorophyll-a has been replaced by August 2011.(see Fig.3)

7. Fig. 7 shows the correlation between the bottom dissolved oxygen and the Brunt-Vaisala frequency (N²). Are both variable calculated for 2010? Please specify it in the text.

Ans: N² was calculated for 2010 in the all model runs.(line187)

8. Figure 10a (line 202) is explained before figure 8 and 9. Please number the figures following a sequential order.

Ans: Figure 10 has followed by Figure 7.Thus the figures is following a sequential order.

9.In figure 9 is shown the simulated surface salinity for the period July-September. Please specify the year.

Ans: Figure 9 is shown the simulated surface salinity for the period July-September in 2010. In this paper, all the results of sensitivity experiment are 2010.

10. Paragraph 3.1 model validation. Simulated surface temperature and salinity are compared with GDEM data, and differences between the two fields are shown in Fig.2. However, no statistical analyses have been conducted to demonstrate that the differences between simulations and observed data are not significant. Line 109: “Apparently, the model results SST and SSS were similar to GDEM data.” To validate the model statistical analysis are necessary and this should be explain in the text.

Ans: The model statistical analysis of SST and SSS have been added in the paper.(line 116-118)

11. Line 118-119: “It can be seen that the patterns of chlorophyll-a were comparable to the SeaWifs-derived data”. The authors should add statistical analysis in order to compare the simulated and observed data (fig.3)

Ans: The statistical analysis of chlorophyll-a have been added in the paper. (line 127)

12. Line 141-142: the authors should calculate also BIAS and add it to figure 4.

Ans: The BIAS has calculated and added in the paper.(line 152-156)

13. Line144-145: this sentence should be moved to the discussion Section.

Line 149-150: Comparison with other studies should be expanded and moved to the discussion section.

Ans: They have been moved to the discussion section.

14. Line 163-165: looking at fig. 6a, in the Base model run hypoxia zone appeared in August; and it disappeared in November.

Ans:It has been modified.