

Interactive comment on “Modeling the seasonal cycle of the oxygen minimum zone over the continental shelf off Concepción, Chile (36.5° S)” by J. Charpentier et al.

J. Charpentier et al.

jcharpentier@profc.udec.cl

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We are deeply thankful for the useful comments of the anonymous reviewer. All your comments have been considered to enhance the revised version of this paper, especially in relation with the organization of the paper. Because of that, we rearrange the structure of the paper, in order to concentrate all the descriptive (original and published) information and analysis at the beginning of the article, and leave results and discussion for the analysis of the model, which is, the main subject of this work.

Response to general comments:

1. As you say, we developed an analysis of typical winter and summer profiles, in order
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to describe the seasonal cycle of the region, and the denomination of “modes” is not adequate. In the new version we refer to summer or winter “typical profile”, instead of “mode”

2. This paragraph has been moved and integrated to the introduction
3. We re-arrange the section dedicated to the sensitivity test in order to improve its understandability and to focus in the results of the model
4. The section called “Summary and conclusions” has been also re-arranged

Specific comments

1. We corrected the inconsistencies and use DOC (dissolved oxygen concentration) all over the text.
2. We correct this to use the same unit in the paper
3. In the paper restructuration this section has been removed and the statement is properly discussed in the description of the oxygen dynamics
4. This sentence has been removed. The result of the SCOR workshop published by Peña et al. (2010) clearly states the lack of works in this subject.
5. This inconsistency has been corrected
6. The correct reference is Eq. 3. This has been corrected.
7. All references to the models bio1 and bio2 have been corrected
8. Indications have been added to the figure.
9. Panel d on the Fig. 7 shoes only one curve which is the same for summer and winter, with a variable amplitude, as is explained
10. The lines mentioned cannot be seen clearly because they are overlapped, in the new Fig. 8 we try to improve the visibility of the profiles, and we states the certain lines

are overlapped.

Technical comments

We do our best effort to improve the English writing, the journal edition process should correct the grammar mistakes.

References

Peña, M. A., Katsev, S., Oguz, T., and Gilbert, D.: Modeling dissolved oxygen dynamics and hypoxia, *Biogeosciences*, 7, 933-957, 2010.

Interactive comment on *Biogeosciences Discuss.*, 9, 7227, 2012.