

Title: Water column biogeochemistry of oxygen minimum zones in the eastern tropical North Atlantic and eastern tropical South Pacific Oceans

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MS Type: Reviews and Syntheses

The referee comments submitted on both rounds of review reflect the lack of thread to this review. As indicated a serious overhaul is required. In the first review round, recommendations were made to improve readability. These recommendations have not been adopted sufficiently so that the readers have the same problem as before. To take this criticism seriously, the manuscript should be rewritten again before it can be published. This has not been done; however still possible.

The positive side is that all this information is put together. In this regard, it will be an invaluable resource in the future and deserves eventual publication. **But fundamentally the revised MS has not changed that much.** You have not condensed or chosen to link the multiple data together in a better fashion. The ms still reads like a short textbook or encyclopedia, albeit focusing mostly on the results by this research group.

A possible way to do this is to redefine in the abstract the content according to the title, Lines 9 & 10 in the abstract are overambitious: to satisfy this statement would require an entire volume (and obviously from referee comments, coverage of a lot of recent work on some topics is inadequate). So revise that statement to redefine the scope according to information in the introduction:(lines 18 onwards). This could make the review less general, limited in scope to focused work carried out in the selected regions and allow you to reduce. As most referees have noted and severely criticized the bias in work referenced, this must be addressed or at least explained. Restrict what is presented, and cut out a lot of unnecessary padding.

Align what and how much you include in the review into a theme. A great deal written is general accepted background on low oxygen environments and OMZs, so although necessary to ensure that the reader has that background, select and summarize. Skill is needed to then focus the specific information and comparisons from the identified regions in the Pacific and Atlantic, within that general context but keeping to a theme. If you elaborate on (similar) processes taking place in other low oxygen environments or OMZs, use and quote as example only and identify the locality. Because of the huge amount of literature from regions all over the world, on each of the process topics you have included, by going general you inevitably have missed a lot. Reviews need to be comprehensive: omissions are noted and understandably queried by the referees. The more general, the more difficult to cover, so confine the coverage and cut down superfluous content. Consider removing or shortening and merging sections that do not have direct relevance to the biogeochemical focus of the identified regions. As an example, section 2 is a rather strange combination, with sensitivities & physiology of metazoans in OMZs interesting but huge topics in their own right, - not pertaining to the biogeochemical focus of the ms.

Regarding the figures: most are relevant. Figure 5 for sulphide - a schematic based on which of your two regions ? - it looks more like Benguela.