

## ***Interactive comment on “Cryptic role of tetrathionate in the sulfur cycle: A study from Arabian Sea sediments” by Subhrangshu Mandal et al.***

**Subhrangshu Mandal et al.**

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Anonymous Referee #1

Referee's Comment: This is a new submission of a revised version of a manuscript that I had reviewed earlier. The overall quality of the manuscript is much improved now, the figures are clear and the additional figures are helpful. In addition, the writing is much improved, except in section 4.2 which somewhat stands out from the rest and needs an overhaul (see details in the annotated PDF attached).

The research is interesting and addresses sulfur species species, which are up to date

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only rarely considered in the complex cycling of sulfur in marine sediments and aims to contribute to a deeper understanding of the latter. Experiments and methods are well described and appropriate. Results are also presented in an appropriate fashion.

Authors' Response: We thank the Reviewer for appreciating the extensive upgrading that we had rendered to this work (in the form of new data as well as discussions) under the previous revision. We also agree that a refurbished Section 4.2 would add to the overall quality of the scientific narrative, so have now incorporated the editorial suggestions that you provided through the annotated PDF file of the manuscript.

Authors' Changes in Manuscript: All the editorial suggestions provided within the annotated PDF (including those for Section 4.2) of the manuscript have now been incorporated into the new manuscript.

Referee's Comment: However, I still have a problem with the discussion of the results and outcomes. The new discussions section is rather short and in large parts is rather a result presentation than a discussion. For example, lines 648-661 is fully descriptive and would fit to the results section rather than the discussion. I am missing a clear streamlined story that elaborated the meaning of the results in the context global or local sulfur cycling and a clear presentation of what we actually learned from these results and experiments. I suggest rewriting the discussion and streamlining towards the relevant findings. In its current form, it is still not clear. In this context, a conclusion section that presents the outcome in a short and to the point manner would be very helpful to not leave the reader alone with figuring out what the major outcomes are. Section 4.3 is closest to a conclusive section and could be part of a conclusion.

Authors' Response: We agree that the entire Discussions section still warranted another round of full-fledged overhaul, both structural and material; so in the latest revised manuscript we have not only edited and restructured the Discussions text as per your suggestions but also put in new information in perspectives of the current data. As for Section 4.3, we have now completely refurbished it as the Conclusions

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sub-section, with new inputs and citations; furthermore, lines 648-661 have been sent to the Results section, as per your suggestion.

Authors' Changes in Manuscript: As stated in the above response.

Referee's Comment: I have attached an annotated PDF with comments and editorial suggestions. I think that with a major rework of the discussion section focusing on streamlining and explaining what the experimental result may teach, and together with a conclusion section, is needed before the paper can be published.

Authors' Response: We gladly welcomed and highly valued your additional effort to put editorial suggestions directly into an annotated PDF, and so have now incorporated all its contents in letter and spirit. In doing so we have reworked the Discussion section (i) by focusing on the central takeaway from all the experimental results, and (ii) by providing a Conclusions sub-section, based on the previous Section 4.3.

Authors' Changes in Manuscript: As stated in the above response.

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