

# Author responses to Anonymous Referees for “Millennial scale sea surface temperatures of the western Arabian Sea between 37 - 67 ka BP”

<https://doi.org/10.5194/egusphere-2024-865>

For ease we have copied the referee comments above the author responses.

**RC1** - <https://doi.org/10.5194/egusphere-2024-865-RC1>

*“The manuscript "Millennial-scale sea surface temperatures of the western Arabian Sea between 37–67 ka BP" by Scott et al. presented excellent new data of paired Mg/Ca SST data from the Arabian Sea. The data covers a critical time in the North Hemisphere that experiences abrupt oscillations of millennial-centennial scales; therefore, it is valuable to test any linkage or temporal or phase relationships between the high and low latitudes climate. The data are well-presented, and interpretations are reasonable and thus publishable in EGU sphere. Though the manuscript is worthy of publication, I suggest the authors show the age model uncertainty of the core (Figure 3) while comparing it with the ice core. Several statistical methods allow the authors to show the C14-based age model with age uncertainties associated with the dating. The revised figures with age uncertainties will be more helpful in examining the temporal relationships between the H events and rapid changes in the Arabian monsoon, and the interpretation could be better incorporated into the text of the next version. The H events should be highlighted in Figure 6, too, and also need to be examined for any temporal relationships between the NH cooling and temperature gradient (upwelling?) in the Arabian Sea. I will be more than happy to evaluate the following revised version of the manuscript and look forward to the publication of the paper.”*

## **Response to RC1**

We thank Referee 1 for their valuable comments and their time spent reviewing our manuscript. We thank them for the positive feedback and insightful comments. We will add an improved age modelling chapter to the next version of the manuscript which will include additional details related to the age model generation as well an assessment of uncertainties. We will also revise our figures to ensure temporal relationships between different records (including timing of Heinrich Events) are easier to compare.