We would like to thank the reviewer this second round of review, and for the time and suggestions which helped improve the manuscript.

AC3 to RC3: Dalton Hardisty

I have read the reply to reviews and revised text and figures. The authors have made careful updates to both the figures/methods and discussion of these data. I have only minor comments for consideration prior to publication.

We thank Dalton Hardisty for his time and suggestions, the second revision further helped improve the manuscript.

A recent study published this month, Cheng et al., 2026 (10.1016/j.gca.2026.06.020), evaluated iodate from the semi-enclosed Baltic Sea and provided some evidence for low iodate and potential mechanisms.

Thank you for the suggestion. The mechanisms proposed imply a reduction in iodate concentration, whether due to oxygen depletion or uptake by primary producers. The Mediterranean Sea is an oligotrophic basin, with much lower primary productivity than in the Baltic Sea. It is a well-oxygenated basin, but interannual oxygen depletion has been observed, potentially leading to iodate depletion. However, the available data indicate the concentration of dissolved iodate ranges from 410 to 480 nM. We have added these elements in the section 3.5, lines 581 to 591.

Line 395: is the correlation between p25O2 and latitude a function of temperature and its influence on oxygen solubility in the upper 500 m used for p25[O2]?

It is also possible that the correlation between p25O2 and latitude is partially linked to the temperature through the latitudinal gradient in temperature and its influence on oxygen solubility.

Considering that only temperature changes for a seawater at 36 PSU at equilibrium with the atmosphere, the range of oxygen concentration is 200 to 300 µmol/kg, which should result in high I/Ca. So, oxygen concentration may be the primary driver.

We have added this information in the manuscript lines 340 to 345.

Line 550: Just a note that high I/Ca approaching 30 µmol/mol has been observed in epifaunal forams (Zhou et al., 2016: https://doi.org/10.1002/2016PA003020), which is interpreted to reflect elevated pore water iodate formed from the oxidation of organic-I released from sediment. This implies that authigenic I/Ca need not necessarily be near detection limits.

We thank the reviewer for pointing out this mechanism. We agree that the authigenic I/Ca ratio is not systematically close to the detection limit, and that high I/Ca values in this phase are possible if organic-I is released under oxic conditions. The Mediterranean Sea, and especially the eastern basin, is oligotrophic, with limited organic matter and related iodine accumulation in the sediment. Taking this into account, we consider that the I/Ca ratio of authigenic carbonates should be low and that this mechanism alone is unlikely to explain the observed I/Ca in the Eastern Mediterranean Sea.

For the new Figure S4, make the x and y axis scales the same to allow easier comparison. I otherwise like this change.

Thank you for this suggestion. We have changed the x and y axis to the same scale for easier comparison.

Given the wide range of variables plotted against I/Ca in the database I wonder if a principal component analysis might help summarize the relative strength of relationships between these variables.

Thank you for this suggestion. We also considered to use a Principal Component Analysis (PCA) on the dataset. However, PCA was not kept in the final paper because the dataset contains missing values across variables. Missing values would have required the exclusion of the whole row of observation in order to use PCA. Furthermore, standard PCA identifies linear combinations of variables, which may not adequately capture non-linear relationships between parameters and foraminiferal I/Ca.

Instead, we performed non-parametric correlation analyses using Spearman's rho and Kendall's tau. The rank-based approaches are more suitable as they do not assume normally distributed variables or linear relationships. This approach results in large correlation tables but provides a more comprehensive characterisation of the relationships between foraminiferal I/Ca and the investigated parameters given the structure of our dataset.