

The manuscript «Exceptional 2023 marine heat wave reshapes North Atlantic coccolithophore blooms» assesses the impact of North Atlantic coccolithophore blooms to both extreme events and long-term ocean warming. Using 25 years of satellite-derived particulate inorganic carbon data, the authors compare bloom dynamics in two regions; the Celtic Sea and the Barents Sea. As I highlighted in the first round, the study is relevant because it provides valuable insights into carbon cycle responses to both long-term and extreme climatic events.

I think that the authors have made a great effort to improve the manuscript from the previous iteration. My main complaints were that the article was primarily descriptive, and lacked clear indications of its contributions in terms of new data or methods. Additionally, some broad concepts were introduced without supporting information. I am glad to see that these flaws have been addressed. However, I still think that terms such as Atlantification and acidification are not quantified, and might be something to explicitly address or indicate. I point here especially to expanding the discussion of the impacts of ocean acidification, which can be beneficial to contextualize long-term declines in the productivity of these calcifying organisms.

I also believe that the paper would benefit from disentangle the contributions of transient extreme events from those of persistent global warming. This may not be within the scope of the study but I think it would be valuable to include something less descriptive but more quantitative (maybe attribution methods, whose importance are recognized by the authors to distinguish the internal climate variability vs anthropogenic climate change).

I don't have many specific comments: I believe the "Results" section should be "Results and Discussion". The paragraph from lines 170 to 175 seems like conclusions rather than results nor discussion, and should be removed or moved. Following lines 194 to 196, I also wonder if the title of the paper should be reworded to include the long-term effects. Line 31 suggests that internal variability and long-term warming trends are the drivers of mhw.