

Comments on the revised manuscript “Acidification, deoxygenation, nutrient and biomasses decline in a warming Mediterranean Sea”

I would like to thank the authors for the quality of their reviewed manuscript. The revised version of the manuscript is now much clearer, all my questions have been addressed, the modifications have been made to the manuscript. The simulation protocol has been re-written and other technical information (spin-up, boundary conditions...) have been added. The figures and their captions also significantly improved. The discussions have been significantly changed and now propose a more rigorous comparison with the existing literature and emphasize more the importance of using a high resolution. Finally, it also focuses more on the differences between the RCP4.5 and RCP8.5 scenarios.

I believe that this paper is now ready to be published and that this work is a significant step forward toward a better understanding of the effects of climate change on the Mediterranean Sea. I list below a few minor changes that should be made before publication.

Minor remarks :

Line 83: “CO₂” abbreviation hasn’t been defined before

Line 214: You introduce ALK and you don’t use it on line 215 or line 227, be careful to be consistent with the abbreviations.

Line 341: “the resolution to 1/24 degree”; Change "degree" for the symbol to be consistent with the lines above.

Line 346: “chlorophyll-a (Chl-a)”; You could introduce this before and remove the chlorophyll-a, it would be more consistent. See line 943 as well.

Bibliography: Some references end with a dot “xxx 2019.” and others end with the date without a dot, see for example line 1122, 1141.

Figures :

The figures need to be carefully checked. I will list here figure by figure what needs to be corrected. A general remark is that the font size between all the figures needs to be coherent.

Fig.2: h) the unit is false for pH

g&i) space between mu and mol

Fig.15: space between mu and mol for DIC unit

Fig.16: c & d) you use d⁻¹ here, but usually you use year⁻¹ so use day⁻¹

Fig.17: a) end bracket is missing for concentration

Fig.S4: Yaxis title “MLD year [m]” why year ?

Fig S5: you use Mmol but if I am not mistaken in the manuscript you use mmol please correct this (as well in the other figures)

Sp1: I like this table that is a great improvement, the caption however could be clearer.

The values are averaged spatially and between 0-100 m and 200-600 m?

Adding the std could be nice.

