

## EDITOR

Dear authors,

Thank you for submitting the revised version of your manuscript. Both reviewers recommend publication but referee 2 provides a list of edits that should be taken into account when preparing the final version. I agree with their comment that some figures should be moved to the appendix (for instance, Figs. 2 and 3). Also, the quality and resolution of all figures should be checked thoroughly.

Best regards,  
Emilio Marañón

Dear Editor,

The authors would like to thank you and the referees for your time and work on this paper. All the comments have been carefully taken into account. We agreed to put Fig 2. on appendix, but we would rather keep Fig. 3 and Fig. 14 as they are. Fig 3. shows that all our measurements and methods for chl<sub>a</sub> agree, which we think is important for supporting the results. We would prefer to keep it in the core of the paper. Fig. 14 is showing the sudden change in the photo physiology and is a support to a large part of the discussion, we would also prefer to keep it as it is.

Best regards,  
Stéphanie Barrillon.

REVIEWER #1

**Anonymous during peer-review: Yes No**

**Anonymous in acknowledgements of published article: Yes No**

**Recommendation to the editor**

**1) Scientific significance**

Does the manuscript represent a substantial contribution to scientific progress within the scope of this journal (substantial new concepts, ideas, methods, or data)?

Excellent **Good** Fair Poor

**2) Scientific quality**

Are the scientific approach and applied methods valid? Are the results discussed in an appropriate and balanced way (consideration of related work, including appropriate references)?

**Excellent** Good Fair Poor

**3) Presentation quality**

Are the scientific results and conclusions presented in a clear, concise, and well structured way (number and quality of figures/tables, appropriate use of English language)?

Excellent **Good** Fair Poor

For final publication, the manuscript should be

**accepted as is**

accepted subject to **technical corrections**

accepted subject to **minor revisions**

reconsidered after **major revisions**

**rejected**

**Were a revised manuscript to be sent for another round of reviews:**

**I would be willing to review the revised manuscript.**

I would not be willing to review the revised manuscript.

**Suggestions for revision or reasons for rejection (will be published if the paper is accepted for final publication)**

The authors have substantially improved the manuscript and I recommend the paper for publication.

The authors are deeply thankful for your expertise and time on this paper.

REFEREE #2

**Anonymous during peer-review: Yes No**

**Anonymous in acknowledgements of published article: Yes No**

**Recommendation to the editor**

<b>1) Scientific significance</b> Does the manuscript represent a substantial contribution to scientific progress within the scope of this journal (substantial new concepts, ideas, methods, or data)?	<b>Excellent</b> Good Fair Poor
<b>2) Scientific quality</b> Are the scientific approach and applied methods valid? Are the results discussed in an appropriate and balanced way (consideration of related work, including appropriate references)?	<b>Excellent</b> Good Fair Poor
<b>3) Presentation quality</b> Are the scientific results and conclusions presented in a clear, concise, and well structured way (number and quality of figures/tables, appropriate use of English language)?	Excellent <b>Good</b> Fair Poor
For final publication, the manuscript should be accepted as is accepted subject to technical corrections <b>accepted subject to minor revisions</b> reconsidered after major revisions rejected	
<b>Were a revised manuscript to be sent for another round of reviews:</b> I would be willing to review the revised manuscript. <b>I would not be willing to review the revised manuscript.</b>	

**Suggestions for revision or reasons for rejection (will be published if the paper is accepted for final publication)**

I am thankful to the authors for taking the time to thoroughly revise the manuscript. Having reread the article, I feel that the manuscript has clearly improved and that the authors have included new relevant information both in the text and the supplementary material. As such, I have only very minor suggestions.

The authors are deeply grateful for your reading and comments. Answers are inlined in your suggestions.

Minor comments:

If possible, make an effort to slightly reduce the number of figures in the main text. I'm sure some of the more technical figures can be added to the Supplementary Material. Example, Fig 3 and 14.

We decided to put Fig. 2 in appendix, but we would rather keep Fig. 3 and Fig. 14 as they are. Fig. 3 shows that all our measurements and methods for chl<sub>a</sub> agree, which we think is important for supporting the results. We would prefer to keep it in the core of the paper. Fig. 14 is showing the sudden change in the photo physiology and is a support to a large part of the discussion, we would also prefer to keep it as it is.

Line 23: keep only turbulence (no need for “intensity of”)

Yes

Line 24: remove either

Yes

Line 25: phenomena

Yes

Line 26: add comma before “such as storms”

Yes

Line 42: add space between ‘may’ and ‘also’

Yes

Line 66: the font size of the doi link does not match the remainder of the text

Yes, we checked and corrected for all the website links.

Line 164: I suggest just leaving ‘chl<sub>a</sub> concentration’, removing ‘integrated over the first few meters’, since the integration actually depends on the first optical depth which can be over a few tens of meters in clear waters.

Yes

Line 166: again, different font size

Yes

Line 197: remove ‘integrated over the first few meters’

Yes

Line 235: here you have a space between the value and the units. However, in other instances, there is not a space. Please uniformize along the text.

We uniformised and checked all along the text.

Table 1: caption should be on top of the table. Also, please add a bit more information on caption (e.g. summary of the variables measured during the cruise, including their sources, their sampling spatial and temporal resolution, and the vertical range along which they were measured).

Yes, we also put all the table captions on top.

Figure 11: It might be just a matter of the pdf compression, but the resolution of this figure seems low. This is particularly visible in the legends within each panel. Please, check. Also, replace “tick labels” for “ticks’ labels”

Yes, we replaced the figure with a better resolved version.

Line 320: *Synechococcus* should be in italic

Yes

Line 337: add coma before while

Yes

Line 401: modelling

Yes