

This is a table listing all the corrections of the manuscript, which we consider important to apply to the final version of the paper. We needed to update Figs. 3, 4, 5, 6, 7 and 12 in order to update the units of measures (from quanta to photons), as well as to correct some other formatting issues in the Hovmoller diagrams.

COR	PG	LINE	OLD	NEW	NOTES
#1	1	13-	...a 1-dimensional model to simulate the vertical and temporal variability of algal chlorophyll concentrations. In addition to PAR as input, alternative light and vertical mixing models were considered. We evaluate the models' skill to reproduce the spatial and temporal variability of deep chlorophyll maxima as observed by BGC-Argo floats. The assumptions used to set up the 1-dimensional model are validated by the high number of co-located in situ measurements. Our results illustrate the key role of PAR and vertical mixing in shaping the vertical dynamics of primary producers in the Mediterranean Sea. Moreover, we demonstrate the importance of modeling the diel cycle to simulate chlorophyll concentrations in stratified waters at the surface.	...a 1-dimensional model to simulate the vertical and temporal variability of algal chlorophyll concentrations. The model was initially forced with PAR measurements to assess its skill when using quality-controlled light profiles, and subsequently with a number of alternative bio-optical models to analyse the model capability when light observations are not available. Model outputs were evaluated against co-located chlorophyll profiles measured by BGC-Argo floats. Results highlight that the data-driven model is able to reproduce well the spatial and temporal variability of deep chlorophyll maxima depth observed in a number of Mediterranean sites. Further, we illustrate the key role of PAR and vertical mixing in shaping the vertical dynamics of primary producers in the Mediterranean Sea. The comparison of alternative bio-optical models identifies the best simple one to be used, and suggests that model simulations benefit from considering the	We think that the abstract formulated in this way is much clearer and communicates better our results. If possible we ask to substitute the text as reported.

				diel cycle.	
#2	2	1	At present, no studies have tried to ...	No studies have so far tried to ...	unnecessary start of the sentence - we suggest to simplify it accordingly
#3	2	25	In particular, such analysis allows us to study some of the drivers ...	Such analysis allows us to study especially some of the drivers ...	see comment #3
#4	3	66	..., which embeds the OGSTM-BFM and the surface Chl, which embeds the OGSTM-BFM and assimilates surface Chl ...	missing word
#5	5	48	Given the mono-spectral ...	Given the monospectral ...	one word
#6	5	79	(see Sect. S4 Supplement)	(see Sect. S4 in Supplement)	pay attention that sometimes it is written Sect. SX “in” Supplement, sometimes “in the” and sometimes without any preposition
#7	9	8	subbasin (see Sect. S4 in the Supplement).	subbasin (see Sect. S4 in Supplement).	see comment #6
#8	13	Figure 11 caption	equals 0.5 mol photons m ⁻² d ⁻¹	equals 5.8 μmol photons m ⁻² s ⁻¹	uniform units
#9	13	9	Such a combined configuration can integrate in a single framework multi-data measurements provided by BGC-Argo floats.	A combined configuration of this kind can integrate multi-data measurements provided by BGC-Argo floats in a single framework.	we noticed an excessive repetition of the word “such” in the following sentences
#10	13	47	derived from other processes, such as	derived from other processes like	see #9

			horizontal advection and subduction of water masses	horizontal advection and subduction of water masses	
#11	14	6-7	CL1 (without diurnal cycle) shows the overall highest correlation, comparable with REF. The comparison of different bio-optical models ...	The comparison of different bio-optical models ...	IMPORTANT! Please remove the sentence in red for better clarity.
#12	14	28	Such an approach could thus be exported to more complex biogeochemical models and generalized at a global scale.	The proposed approach could be thus exported and generalized at a global scale.	please remove the part in red for better clarity. See also comment #9
#13	14	13-20	Our analysis can also help determine how the use of light fully integrated in the visible range of the spectrum (400 to 700 nm, REF) improves predictions when compared to simplified approaches (i.e. all the OPT simulations here considered). These results also highlight the strategic relevance of BGC-Argo data: temperature, salinity, and radiometric parameters encapsulate fundamental ...	Our analysis can also help determine how the use of light fully integrated in the visible range of the spectrum (400 to 700 nm, REF) improves predictions when compared to simplified approaches (i.e. all the OPT simulations here considered). Moreover, we show that on the time scales here considered (months), vertical processes are more relevant than horizontal ones, and that the parametrizations used in the biogeochemical model are adequate to describe the main processes taking place on these scales. Results also highlight the strategic relevance of BGC-Argo data: temperature, salinity, and radiometric parameters encapsulate fundamental ...	paragraph added, see #1 comment
TS7	14	66	Acknowledgements	Financial Support.	please move the

			We acknowledge sponsorship from the MISTRALS-MERMEX project.		sentence "We acknowledge sponsorship from the MISTRALS-MERMEX project." from the Acknowledgments to the Financial support.
TS12	15	55	Gerbi, G., Boss, E., Werdell, J., Proctor, C., Haëntjens, N., Lewis,M., Brown, K., Sorrentino, D., Zaneveld, J. R. V., Barnard,A. H., Koegler, J., Fargher, H., DeDonato, M., and Wallace,W.: Validation of ocean color remote sensing reflectance using autonomous floats, J. Atmos. Ocean. Tech., 33, 2331–2352, 2016	Gerbi, G., Boss, E., Werdell, J., Proctor, C., Haëntjens, N., Lewis,M., Brown, K., Sorrentino, D., Zaneveld, J. R. V., Barnard,A. H., Koegler, J., Fargher, H., DeDonato, M., and Wallace,W.: Validation of ocean color remote sensing reflectance using autonomous floats, J. Atmos. Ocean. Tech., 33, 2331–2352, https://doi.org/10.1175/JTECH-D-16-0067.1 , 2016.	doi missing