

Ocean Sci. Discuss., referee comment RC1
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Comment on os-2021-124

Anonymous Referee #1

Referee comment on "Influence of cyclonic and anticyclonic eddies on plankton in the southeastern Mediterranean Sea during late summertime" by Natalia Belkin et al., Ocean Sci. Discuss., <https://doi.org/10.5194/os-2021-124-RC1>, 2022

My Overall Recommendation

Moderate revisions

General comment

This paper aims to describe the impact of cyclonic and anticyclonic eddies on the primary productivity, bacterial productivity and plankton biomass in the southeastern Mediterranean Sea. The paper is well written, in some passages a little too long, but still easy to follow. The Figures are generally clear but some of them can be improved as suggested in the specific comments. The biological and biogeochemical aspects are very detailed, with extensive discussions well placed in the context of previous literature. On the other hand, the physical part is not so accurate. It is quickly described only in the Results Section and is not included in the Discussion Section and is not even linked to the results of the biogeochemical parameters. The manuscript should also include a short final paragraph summarising the main conclusions and new findings of this work.

Specific comments:

Title: This paper provides a snapshot of two structures, one cyclonic the other anticyclonic, sampled in the late summer of 2018. The current title is too pretentious, suggesting an analysis that is more comprehensive and extended in time. I suggest adding at the beginning of the title "On the influence..." or at the end of the title "...in late summer 2018".

Results: The AMEDA algorithm finds Argo float traces (grey lines in Figure 1) within both the cyclone and the anticyclone examined in this paper. These data could be useful to describe the temporal evolution of thermohaline characteristics in these structures before and concurrently to the analyzed period, to confirm the presence of upwelling and downwelling within them and/or the flux of cold waters upwelled south of Cyprus into the cyclone #11988.

Line 290: Please add a short description of the SST maps in Figure S2, highlighting the upwelling along the southern Cyprus coast and the following spreading of cold waters in the SEMS.

Line 297: Cyclone #11310 is not shown in Figure S2.

Line 310: Remove the isopycnals from Figure 1d and overlap the corresponding isohalines on the density contour. This will make the properties described in lines 315-317 much more evident to the reader.

Figures 1b, c: Increase the quality of Figures and their sizes (insets are very hard to read). My suggestion is to replace these figures with Figure S3 (e.g. with profiles colored by depth) and move them in the supplementary materials.

Figure 3a: add symbols to identify the anticyclonic, cyclonic, and background conditions.

Figures 4, 5, S4, S5: Increase the quality of Figures