

Dear Dr. Manzella,

We would also like to thank you for the efforts you have made to improve our manuscript and would like to apologize that we did not list the reviewers' questions and comments before the revised manuscript.

To distinguish the corrections, we have now marked the new changes based on your suggestions with grey.

Comment 1a) p2, l17: Referee 1 asked: 'Say somewhere in the introduction that this cruise is part of the MedShip long-term repeat cruise section that is conducted every 5 years in Mediterranean Sea to observe changes and impacts on physical and biogeochemical variables'.

Re: The comment of reviewer 1 was taken into account and a change in the introduction was made as requested by reviewer 1 (see page 5, 21-28, marked in yellow). However, we also now changed the last sentence in the abstract (page 2, 16-18, marked in grey) exactly the same according to your objection.

Comment 1b) p2, l17: 'The title, actually, is somewhat misleading, there is barely any text describing variability and no mention of trends. A more adequate title would simply be "Physical and Biogeochemical Parameters of the Mediterranean Sea during a Cruise with RV MARIA S. MERIAN in March 2018". Please consider the referee comment. '

Re: We agree with your objection that the title is somewhat misleading and changed it according to your suggestion. This publication deals with the data and data quality and not with their interpretation.

Comment 2) p2, l21: 'During the discussion period it was noted that the data are stored in;

<https://cchdo.ucsd.edu/cruise/06M220180302> and
<https://doi.pangaea.de/10.1594/PANGAEA.905887>. Please add both storage links'

Re. The second link you mentioned, was already included (see page 5, line 5). We added the first link (page 5, line 7, marked in grey).

Comment 3) p6, l1: Referee 1 underlined that a basin where convective events are occurring, the interannual variability could be of the same order or even higher than seasonal variability. Referee practically asked you to change this sentence.

Re: To our opinion, reviewer 1 wanted to state that there are also other forces than the influence of LIW (respectively of changes of LIW due to the EMT) on the WMT like interannual variability of convective events due to atmospheric forcing. This objection was taken into account (see page 5, line 21-28, marked in yellow). The steady state hypothesis is not referring to interannual or seasonal scales but too longer periods like the climate scale, specifically the decadal time-scale of repeat hydrography. This sentence was not questioned by reviewer 1.

Comment 4) p6, l6: 'When you talk about Cant, use "ant" as subscript'

Re: We now use ant as subscript in Cant (page 6, 3-8, marked in grey).

Comment 5) p17, l9-10: Rewrite this as "Dissolved Inorganic Carbon (DIC), pH, Total Alkalinity (TA) and carbonate ion (CO₃²⁻) were measured at selected stations and depths (table 9)".

Re: We included "were measured" (page 17, line 10, marked in grey).

Comment6) p17, l13: 'Please specify if and how the inorganic has been transported. Was the PMEL procedures applied? (https://www.pmel.noaa.gov/co2/files/dic_sample_technique_revised_5-17-10.pdf)? Probably this was one of the points on data quality raised by referee 1 ('fair data quality')'

Re: We don't fully understand this question. All samples were measured on-board following the procedures described in the paper. We now state this in the first paragraph of section 3.8 (page 17, line 13, marked in grey).

Comment 7) and 8) p24, l24 and p 27,l13: 'Based on the question posed in the introduction and my additional comment page 3 line 17, can you briefly specify the scales resolved by data? What about trends?'

Re: We now removed "variability and trends" in the title (Comment 1b). The questions we addressed in the introduction should only help to understand the motivation for the cruise. However, in ESSD the focus of the paper is on the data itself, their quality, where to find them, used methods, etc. but not on the scientific interpretation. To discuss scales and trends further analysis of the data has to be made. Basically, we are resolving sub-basin geographic scales at sub-decadal temporal scales – typical of the GO-SHIP repeat hydrography program. This is mentioned in the introduction of the paper.

(All page and line numbers refer to the manuscript ESSD-2020-82-Editor.pdf which is sent together with the letter.)

With best regards

Dagmar Hainbucher