

Interactive comment on “Depth is Relative: The Importance of Depth on TEP in the Near Surface Environment” by Tiera-Brandy Robinson et al.

Anonymous Referee #2

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In this manuscript, the authors present data on Transparent Exopolymer Particles (TEP), Particulate Organic Carbon (POC), Particulate Organic Nitrogen (PON), Particulate Organic Phosphorous (POP), nutrients (phosphate and nitrate), Chlorophyll a, as well as estimated primary production and (to a limited extend) bacterial cell numbers. The respective data was collected during three oceanographic cruises to the Cape Verde region, the Norwegian Sea & fjords and the Baltic Sea. As indicated in the title, the focus of this study is the Near Surface Environment, with data originating from the uppermost 2m of the water column. In particular, the authors state that their purpose was to analyse the vertical distribution of TEP within the upper layers of the ocean (SML aswell as ULW) and examine correlations of TEP concentrations with the biochemical factors named above. As one conclusion of their study, the authors for-

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mulate a quest for establishing standard operating procedures of sampling techniques within their research field.

*****General remarks*****

In my opinion this manuscript is well structured and the presented data are analysed and discussed in an appropriate way. The study significantly expands the current data basis by providing data from three cruises. Conclusions drawn from the results are fair, meaning that they are in general not too speculative and that additional data sources are provided if they are helpful in supporting a statement. The study aims are clearly outlined and the language is fluent and precise. Overall I only have minor suggestions to improve the manuscript:

*****Specific remarks*****

-L16: 'a novel small-scale vertical sampler' : In my opinion it would be a valuable add-on to provide a photograph or sketch of the HSV (e.g. in the supplementary material).

-L231-232: 'total cell numbers (TCN) and small autotroph profiles': Please provide some more information on the flow cytometry part in the material and methods section. How do you define small autotrophs?

-L253: typo/grammar → replace 'has been found'

-L259-261: 'this study is the first to...' : No it is not. Consider e.g. Zäncker, Cunliff & Engel 2018 Front.Microbiol. Please change this part and consider to incorporate according reference.

-L275: Do you have any additional data to support that the high enrichment factors in the Cape Verde region are not an artifact due to a different sampling strategy in comparison to the other locations? Did you take for instance any technical replicates using the glass plate technique of Cunliffe and Wurl 2014/Harvey and Burzell 1982 and/or syringe samples on the Norwegian and Baltic Sea cruises?

-L306: Please provide some more information on the tank experiment. For instance, you could give a short outline in the supplementary material.

-Figures: The numbering of the figures is not corresponding to the order in which they occur in the text. For example Fig.1 is appearing very late in the text. Please adjust the order of all figures.

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