

**Comments to MS os-2020-106. "Annual cycle of sound-scattering mesoplankton in the oxycline and hypoxic zone in the northeastern Black Sea" by Ostrovskii et al.**

In this manuscript authors present an analysis of the seasonal variability of the sound-scattering mesozooplankton layers, on the basis of acoustic data (2 MHz ADCP), oxygen and other physical parameters from a moored automatic mobile profiler. The influence of zooplankton diel vertical migration limited by the oxygen concentration, and vertical distributions of temperature and density are considered. Net sampling data confirmed existence of migrating and non-migrating zooplankton at the study location. Although the topic has been addressed earlier by several authors, it presents a new data set, analyses, results and conclusions. Also, previous studies are adequately mentioned and referenced in the manuscript, and the new outcomes are well highlighted.

**Comments**

- 1) Figure 9. It is mentioned that “The slope of a straight arrow pointing downwards corresponds to a diving speed of  $\sim 1.5 \text{ cm s}^{-1}$ . The ascent is accelerated and reaches values of approximately  $2.5 \text{ cm s}^{-1}$  in the upper 60 m depth.” However, the method for calculating vertical (ascent and descent) swimming speeds is not described in the manuscript, so it is hard to test the validity of these results. The authors should explain how migration speeds are calculated.
- 2) Figures 4, 6, 8 and 10. There is a discrepancy between the legend and the text to the figures: “CE – Calanus euxinus; PE – Pseudocalanus elongatus; SC – small crustaceans; NS – Noctiluca scintillans; PE – Parasagitta setosa; Var – varia”. Please check.
- 3) “Appendix A” should be summarised and referred in the body of the manuscript.
- 4) Lines 97, 98, and 99. Please indicate the company name and the year of publication rather than insert a hyperlink to the manual.