

Interactive comment on “The Pelagic In situ Observation System (PELAGIOS) to reveal biodiversity, behavior and ecology of elusive oceanic fauna” by Henk-Jan Hoving et al.

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Dear Editor, Below follows a response to the comments provided by Referee #2. We list the comment of the referee and respond to it after 'Hoving et al'.

Referee #2: First, I would like to mention that I'm not an expert in this field and can therefore not comment on the methods. I'm specifically thinking of section 3.4. While I think the manuscript was carefully written, I did find a few things that need to be clarified. Lines 56-57 say: "In the last decades, a variety of optical instruments has been developed to image and quantify plankton in situ." But then lines 73 -75 say: "However, published descriptions of optical systems, other than ROVs and submersibles, that vi-

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sualize macrozooplankton and micronekton (>1 cm) in the water column are, to the best of our knowledge, restricted to one (Madin et al., 2006)." This is confusing as it is currently not clear what the difference is between the above mentioned instruments and the ones that have not been described in publications. Maybe mention in lines 73-75 that there are no other instruments capable of capturing such large organisms?

Hoving et al: In the revised version, we have tried to point out the novelty and differentiating characteristics of the instrument and that PELAGIOS is mainly designed to make video observations of large, transparent, fragile organisms, which fills a gap in the current instrument array available.

Referee #2: 75 ff Please be more specific about what makes PELAGIOS different from LAPIS

Hoving et al: We have added information about LAPIS that indicates the difference. For example LAPIS used still imagery, PELAGIOS uses video allowing documentation of behaviour; LAPIS has an illuminated box in which the organisms are photographed, PELAGIOS has forward illumination similar to an ROV. PELAGIOS data can be compared with ROV video transects. There are no additional publications that show LAPIS data and hence the development and application of PELAGIOS is timely.

Referee #2: Link at line 123 not working:

Hoving et al: The video will be available as ESM in the MS

Referee #2: Line 195: What was the total transect time during the night? Must be the same amount as during the day, if not, did you account for this in your analysis?

Hoving et al: We included the transect time and corrected the comparison since the night transects were in total longer. In Figure 4 the data are corrected for time.

Referee #2: Section 3.5 I find it difficult to read through this section. While it is def. useful to know who lives there, I wonder if there would be a better way to summarize it all in a table and make this section shorter?

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Hoving et al: We have rewritten this paragraph to be more concise and improve readability.

Referee #2: 213-215: Do you have a reference for this statement?

Hoving et al: We have added Harbison et al. 1978 as a reference here.

Referee #2: Minor edits Figure captions Figure 2: Why is O₂ plotted but never mentioned? Figure 5: Capitalize "Example" Hoving et al: We have integrated the other sensor data in this figure, as an illustration of complementary video and environmental sensor data collection.

Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2018-131>, 2018.