Ocean Science Discussions

Ocean Sci. Discuss., referee comment RC3
https://doi.org/10.5194/os-2021-104-RC3, 2022

Comment on os-2021-104

Ira Leifer (Referee)

Referee comment on "Ocean bubbles under high wind conditions – Part 2: Bubble size distributions and implications for models of bubble dynamics" by Helen Czerski et al., Ocean Sci. Discuss., https://doi.org/10.5194/os-2021-104-RC3, 2022

Overall, this paper presents very interesting observations detailing bubble size distributions at depths of 2 and 4 m under high seas. The paper has significant structural problems with discussion mixed throughout the results. Also, the discussion section is rather long and somewhat repetitive. As such it needs significant revisions for clarity and other issues before the study is published.

Small item – but please use dissolved rather than destroyed, which suggests a violent and purposeful event. It seems like at line 664 you explain the concept; where you seem to propose that the bubble can maintain its size against hydrostatic pressure (like a ping-pong ball) and then collapse suddenly (as when one takes a pin-pong ball down in a ROV. Are you really implying that surfactant coatings have structural strength? This is a pretty radical proposal, and thus needs strong support.

Otherwise, the paper is very long and could really use a thorough editing to ensure that what is written is technically correct as written, that colloquial words and phrases are avoided, that run on and confusing sentences are rewritten, that duplicative material is removed, that unnecessary speculation are avoided, that discussion sentences are not in the results section (where all the data cannot be assembled to support the discussion sentences), but are in the discussion section.

This paper took me a very long time to review and as such I apologize in advance for any

spelling or grammatical mistakes in the detailed items below. I could have accomplished the review quicker by just generalizing issues to address, but am very supportive of the science being published and thus spent the time.

Please also note the supplement to this comment:
https://os.copernicus.org/preprints/os-2021-104/os-2021-104-RC3-supplement.pdf