

## ***Interactive comment on “Succession of the sea-surface microlayer in the Baltic Sea under natural and experimentally induced low-wind conditions” by C. Stolle et al.***

**Anonymous Referee #4**

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### General Comments:

This study evaluated how wind speed influences chemical and biological differences between bulk water and the sea-surface microlayer. The combination of observational and experimental data is a strength of this paper. The fact that results from both approaches generally agree is also encouraging. The authors' results suggest that reduced wind speed drives a stable microlayer and results in divergence of chemical and biological parameters between the microlayer and water column. This finding is intuitive and agrees well with previously developed theory and research in disturbance ecology and aquatic microbial ecology. Further consideration and integration of this literature into the manuscript would be a benefit.

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### Specific Comments:

- End of page 3156: Is there reason to expect the stability or dynamics of the SML to change with climate change (more or less wind)? May be another good reason for the study.
- Methods 2.1: Any further discussion on why the glass plate method was chosen or is ok? Is a glass collection tube whose ends were closed by a drop-weight mechanism a Van Dorn sampler? In explanation of enrichment factor replace  $\mu$  and b subscripts with SML and ULW the additional symbols unnecessarily complicate the description.
- Methods 2.2: Does sampling cause mixing between the SML and ULW?
- Methods 2.6: More detail on community composition analysis should be provided. Citing manufacturer determined default methodologies isn't useful unless you briefly describe them.
- Results 3.1: How is the depth of the SML determined? Didn't find this in the methods. Was this measured on the other days?
- Results 3.1.2, line 2: “4.6 10<sup>6</sup>” should be “4.6x10<sup>6</sup>”
- Results 3.2: I think the comparison of ULW conditions in and out of mesocosm should be shown.

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