EGUsphere, referee comment RC1
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Comment on egusphere-2022-499

Anonymous Referee #1

Referee comment on "Dimethyl sulfide cycling in the sea surface microlayer in the southwestern Pacific – Part 1: Enrichment potential determined using a novel sampler" by Alexia D. Saint-Macary et al., EGUsphere, https://doi.org/10.5194/egusphere-2022-499-RC1, 2022

Dear editor,

Thank you for asking me to review the manuscript entitled "DMS cycling in the Sea Surface Microlayer in the South West Pacific:1. Enrichment potential determined using a novel sampler". This study was conducted well and I found the paper to be very well written. I think it will be a very useful study for researchers interested in ocean DMS cycling, and is a nice contribution to the growing body of literature on Sampling of the SML. It is concise and all the sections seem to be about the right length to me. In particular, I thought the authors did a good job interpreting their results and looking forward to future research without getting carried away. I think that everything that they have presented is worth reporting. So I really don't have too many criticisms for this paper, which is a refreshing experience.

Specific comments

Sections '2.6 DMS air-sea flux calculation' and '3.5 Air-sea flux': DMS concentrations in the SML were determined using the gas-permeable tube, the plate and the sipper techniques. Thus, DMS air-sea flux estimates can be obtained using DMS concentrations from three different sampling methods. Please point out detailed DMS concentrations which were used in DMS air-sea flux calculation. DMS measurements with the gas-permeable tube, or with the plate, or with the sipper?

Section '3.4 Correlations between variables': I thought DMS measurements with the plate, or with the sipper, were used to the Pearson test. Please point out it clearly. Moreover, a novel gas-permeable tube technique approach gave accurate measurements of DMS concentrations in the SML. Why did not choose DMS measurements with the gas-permeable in the SML to analyze correlations between variables?