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Comment on bg-2021-189

Anonymous Referee #3

Referee comment on "Improved prediction of dimethyl sulfide (DMS) distributions in the northeast subarctic Pacific using machine-learning algorithms" by Brandon J. McNabb and Philippe D. Tortell, Biogeosciences Discuss., https://doi.org/10.5194/bg-2021-189-RC3, 2021

DMS derived from marine phytoplankton, is very important to the marine biogenic sulfur cycle. Model simulation is useful to understand the DMS spatial and temporal distribution. In this study Machine-learning models were used to present the DMS flux and the relationship between DMS concentration and SSN, PAR, SSHA in the NESAP. The comments are as follow:

- What is the advantage of machine-learn algorithms for the DMS simulation, comparing with other models. As machine-learning algorithms requires large datasets for the training and testing process. How to solve the problem of sparsity observation data for different ocean.
- In the manuscript, the summer time DMS data from 1997 to 2017 was used in the modeling simulation. It is obscure that the author used the average of DMS concentration from 1997 to 2017. I suggest the author presents the modeling results of the temporal distribution of DMS from 1997 to 2017.
- Line301-303 Why the DMS correlated well with SST?