

General comments:

The authors have made significant efforts to address my concerns and improve the manuscript. However, a few critical parts still require attention before the manuscript can be accepted for publication.

Specific comments:

- 1) Trend analysis is necessary to match the manuscript with the title. The DMS emission flux is theoretically determined by the seawater concentrations and gas transfer parameterization. Environmental factors, such as wind speed, affect the gas transfer rate. While the manuscript highlights the discrepancies in seawater concentrations as the main contributor to uncertainty in global emission flux, it is crucial to present spatial variations in emission flux trends or at least global emission trends. This is important due to the role of DMS in climate, and incorporating this analysis would greatly enhance the contribution of this work.
- 2) Reviewer 3 provided excellent suggestions for a figure to illustrate the differences between parameterizations. Although the authors have included Figure S1-S7 using monthly data, it remains difficult for readers to follow. I recommend adding a figure in the main text with three subfigures: the first subfigure should show the wind speed dependence of the gas transfer rate; the second subfigure should display the temperature dependence; the third should illustrate the temperature dependence of the Schmidt number (Sc). The figure should be derived from theoretical estimates, and monthly data are not needed for their creation.