

Interactive comment on “How Marine Emissions of Bromoform Impact the Remote Atmosphere” by Yue Jia et al.

Anonymous Referee #2

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The authors present an interesting model study on the spatial variation of atmospheric CHBr₃ concentrations. Overall the paper is clearly written, and easy to read. While I agree their main conclusion that the spatial distribution is a result of the interplay of transport and emissions (and chemical depletion), I think a major revision is needed before it can be accepted for publication. My major concerns are:

1. There is no sufficient description on their transport model. The FLEXPART model has been widely used in various researches. But for CHBr₃ simulation, the reader still wants to know the important details, including its description on the air-sea exchange, and on the oxidation scheme etc.

2. There is no comparison of their simulations with other models, or more importantly with observations. There are questions on how realistic their simulations are. For ex-

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ample, the model shows large areas with very low CHBr₃ concentrations (<0.1 pptv), particularly at the 5km level (Figs.8 to 10). They appear inconsistent with aircraft measurements such as the recent CAST and CONTRAST campaigns.

3. More detailed analysis is needed. At some places, the paper tends to establish the correlation between the CHBr₃ distribution and the (snapshot of) wind fields. Considering the lifetime of CHBr₃, such correlations are often not obvious, as demonstrated by their own results. Tagged simulations (for example, Butler et al., 2018) may help the reader understand the complexity, particularly for the emission ‘hotspots’.

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-1194>, 2018.