

Response to Comments for “Implementing marine organic aerosols into the GEOS-Chem model”

B. Gantt et al.

Note that the responses are in bold italic typeset.

Anonymous Referee #2

Heartfelt apologies for how long it took me to submit this review, especially given how clear and straightforward the paper is. It is within the scope of ACP (GMD), makes a contribution to the field which is of scientific significance, and should be published in ACP (GMD) with only technical corrections.

The sentence starting with “Sea-salt aerosols...” on line 4 of page 5971 should be split into two sentences. In the preceding sentence (“Although marine...”), it might be nice to provide a maximum-minimum range of the different emissions inventories.

The specified sentence has been changed in the updated manuscript, and the emissions estimates have been added.

On line 2 of page 5975, Frankfurt does not have the English/German spelling.

This has been corrected in the updated manuscript.

On page 5976, the words “determined” (line 20) and “particular” (lines 24-25) should perhaps be reconsidered.

The updated manuscript has been changed for clarity and now reads: “During baseline simulations when only terrestrial organic aerosol emissions were included (black circles on Figure 3), GEOS-Chem exhibited a strong model underprediction (normalized mean bias = -79%) and poor correlation (0.16) when compared to observations.” The sentence with “particular” has been removed entirely due to the additional discussion of the seasonal and latitude evaluation.

Please include the R-value and mean bias in the caption for Figure 2.

The R-value of 0.62 and mean bias of -120 ng m⁻³ have been added to the figure caption in the updated manuscript.

I am aware that my comments as a referee have been minor and largely linguistic; however, whenever I made a note on the scientific content, I found that it was addressed elsewhere in the paper. This may be related to Anonymous Referee #1’s statement that Gantt and co-authors have published previously on this subject, but as they note, this paper contains new material in the comparison with observations and the insights to MOA aging.

We appreciate the reviewer’s comment and would refer him/her to comment #2 to Anonymous Referee #1.