

Dear Editor and Referees,

Thanks for giving us an opportunity to revise our manuscript entitled " A revised mineral dust emission scheme in GEOS-Chem: improvements in dust simulations over China "(ID: acp-2020-984). Thanks for editor's effort in handling the review of our manuscript.

We appreciate your positive and constructive comments. We have studied these comments carefully and make revisions on the manuscript. The point-to-point comments and corresponding responses are attached below. The manuscript has been revised accordingly.

Thank you again for your time and effort. We look forward to hearing from you soon.

Best regards,

Yours sincerely,

Rong Tian, Xiaoyan Ma, and Jianqi Zhao

REVIEWER COMMENTS

Thanks to the reviewers for their constructive comments and very helpful suggestions, which have allowed us to clarify and improve the manuscript. Below we address the reviewers' comments, with the reviewer comments in black, and our responses in blue. We have revised the manuscript accordingly.

Reviewer #1:

This study presents an improvement of the dust emission scheme in GEOS-Chem model by incorporating the updated soil texture and aerodynamic roughness length with spatial variability, Owen effect, drag partition correction factor as well as the updated formulation of sandblasting efficiency. Detailed model-observation comparisons are made in China. I think this paper is clearly written and organized and should be accepted in ACP.

Thanks to the reviewer for the comments.