Atmos. Chem. Phys. Discuss.,
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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Modeling dust sources, transport, and radiative effects at different altitudes over the Tibetan Plateau" *by* Zhiyuan Hu et al.

Anonymous Referee #3

Received and published: 21 November 2019

This study provides long-term quasi-global simulations of dust aerosols and investigates the dust source contribution and transport over the Tibetan Plateau (TP). By a tracer-tagging technique, the dust emitted from different deserts are identified and the contributions of dusts from the global major deserts to the TP are quantitively estimated. Furthermore, the dust radiative effects over the TP are also studied. The manuscript is well organized and written. Therefore, I recommend publishing it once the following comments are addressed.

1. The simulation is conducted with the CBMZ-MOSAIC scheme, please briefly introduce how the anthropogenic gas and aerosol emissions form the HTAPv2 are mapped

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Discussion paper

to the CBMZ-MOSAIC species. Otherwise, it is difficult for readers to reproduce the experiment. 2. Could you briefly explain the tracer-tagging technique used in the study without reader to refer to other reference. 3. How the dust radiative forcing is calculated in this study? Is it the double call of the radiative module or other method?

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