

We thank the reviewer for their comments and have uploaded a revised version (with track changes) on ACPD. Below, we address each of the comments (original comment in bold):

(1), The authors can cite the newest PDRMIP data paper in the description of PDRMIP (Myhre et al., 2022). Myhre, G., Samset, B., Forster, P.M. et al. Scientific data from precipitation driver response model intercomparison project. Sci Data 9, 123 (2022). <https://doi.org/10.1038/s41597-022-01194-9>.

We were not aware of this newest publication and changed the reference as suggested.

(2), In line 86, the authors may cite the following new paper (Xie et al., 2020), which also obviously show the changes of the large-scale atmospheric circulations and surface precipitation associated with Asian summer monsoon induced by sulfate and black carbon aerosols using the PDRMIP data.

Xie, X., Myhre, G., Liu, X., Li, X., Shi, Z., Wang, H., Kirkevåg, A., Lamarque, J.-F., Shindell, D., Takemura, T., and Liu, Y., 2020: Distinct responses of Asian summer monsoon to black carbon aerosols and greenhouse gases, Atmospheric Chemistry and Physics, 20, 11823–11839, <https://doi.org/10.5194/acp-20-11823-2020>.

Thank you for pointing out this new publication and we additionally added a reference to another one by Williams et al. 2022 which investigates the dependence of the effective radiative forcing and climate response from absorbing aerosols on the geographic location of the emission source.

(3), In line 91, Previous studies (e.g., Liu et al., 2018; ?; Persad and Caldeira, 2018), which reference the symbol “?” represents? Please add the corresponding reference.

Thank you for spotting this, we added the missing reference.

(4), In the Figure 1 caption, the eastern China and India with regions defined in (a)-(d). The authors maybe add the detailed longitude and latitude information (such as ?-?N, ?-?E) for the defined eastern China and India to provide readers with reference, respectively.

We added the longitude/latitude values in the figure caption of the edited manuscript.