

*Manuscript No.: EGUSPHERE-2023-830*

*Title: Examining the vertical heterogeneity of aerosols over the Southern Great Plains*

*Dear Authors,*

*Thank you for the revised manuscript. The comments by the referees are taken into account in an excellent manner!*

*Please justify the inclusion of a new author.*

**Response:** We thank the editor for the positive feedback, and we look forward to the manuscript being published. We included Marcus Vinicius Batista Oliveira (a Ph.D. student in my research group) in the new author list because, in the manuscript revision process, he generated the back trajectories associated with each cluster shown in Fig. S3. He also assisted in compiling the data regarding the vertical distribution of newly formed particles in the revised manuscript (Figs. 4, 5, and S6). His name has also been included in the revised author contributions.

*Notification to the authors:*

*I noticed that your Figure S6 contains a map. For the next revision, I kindly ask you to clarify if you have created the maps or were they created by a map provider? If the maps were not created by you, please provide in your revised file that the copyright is denoted in the figure itself. If this is not possible, please provide it in the caption. If you are the originator, you can just inform us. Please also see the section "Manuscript composition" in our manuscript preparation guidelines: [https://publications.copernicus.org/for\\_authors/manuscript\\_preparation.html](https://publications.copernicus.org/for_authors/manuscript_preparation.html)*

**Response:** We believe this comment is about Fig. S6 in the first version of the submitted manuscript. This figure is now used as Fig. 14 in the revised manuscript. The figure is created by a map provide, and we have now included the following information in the caption: “Map is created by NASA FIRMS 2023.” More information can be found in the Acknowledge section of the manuscript as suggested by the map provider: <https://www.earthdata.nasa.gov/learn/find-data/near-real-time/citation>.