Dear editor and referees,

We appreciate the comments on our manuscript (egusphere-2025-2154). We have carefully revised the manuscript accordingly to improve the clarity and readability. Please see the point-by-point response below and changes are marked blue in the revised manuscript.

Thank you very much!

Most sincerely,

Yujue Wang and Min Hu

Point-by-point response to review comments

Note: *Review comments are in 12 point italicized font*. Our responses are indented and in 12 point normal font. The revised text is in quotes and in 10 point blue font.

Comments:

I only have minor comments for improving the clarity and readability.

All "organosulfates" can be replaced with "OSs" except the first one

Response: Revised accordingly.

Line 61-67: "Different from MSA, organosulfates are generally with larger molecular weights and weakly hygroscopic taking up water even at subsaturated humidity conditions……" How well are the hygroscopic properties of MSA known? Please cite relevant literatures. It is possible that both MSA and OSs are similarly weakly hygroscopic.

Response: Thanks for the reminding. Yes, we agree with the reviewer that both MSA and OSs are less hygroscopic than the inorganic ammonium sulfate. The hygroscopicity parameter (κ) of OSs might be lower than the MSA due to the larger OSs molecular weight and the addition of hydrophobic hydrocarbon functional groups to the OSs. We have revised or added related descriptions in lines 61–65, and relevant references have been cited.

Lines 61–65:

"Atmospheric OSs are generally with larger molecular weights than MSA, and both are less hygroscopic taking up water compared to the inorganic ammonium sulfate (Brüggemann et al., 2020; Hansen et al., 2015; Peng et al., 2021; Rosati et al., 2022). Previous studies reported the hygroscopicity parameter (κ) of 0.46 for sodium methanesulfonate, and 0.46, 0.40, 0.21 for methyl-, ethyl- and octyl-OS, and the hygroscopicity of OSs decreased with the alkyl chain length (Peng et al., 2021; Tang et al., 2019)."