

Interactive comment on “Particle Wall-loss Correction Methods in Smog Chamber Experiments” by N. Wang et al.

Anonymous Referee #3

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General Comments

The authors present results of an experimental/modeling study aimed at evaluating the effects of particle wall loss on measurements of SOA yields, and providing recommendations for the best approach for correcting for these losses. Data acquired from chamber studies conducted over a period of 3 years were analyzed using a modified version of a model developed by Nah et al. (2017) with SMPS measurements of size-dependent seed particle wall loss at the beginning and end of experiments. Results indicate that the corrections are sensitive to particle size distributions, coagulation, and static charge that can accumulate on Teflon chambers during maintenance or experiments. The results provide quantitative insights into the consequences of wall loss, which are helpful for getting a sense of when and by how much different factors can in-

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fluence corrections. I think the manuscript is concise and clearly written, and is a useful addition to the growing literature on this topic, which can sometimes be confusing. I recommend it be published in ACP after the following minor comments are addressed.

Specific Comments

1. It would be useful to be clear in the Conclusions how this study, the results, and the conclusions compare to those of Nah et al. (2017), which seemed to be pretty comprehensive. The inclusion here of the effect of chamber disturbances is new, and the multi-year data, but it is not clear to me what else is.

2. There does not seem to be a discussion of how well the sulfate tracer method is expected to work under different conditions. The correction for organic/sulfate ratio seems related, but is not obviously the same as correcting an SOA yield. Since this method is often used, and it is much easier than the one recommended here (as long as one has an AMS), it would help to provide more quantitative comments on this method and the uncertainties that can be achieved for certain types of size distributions.

Technical Comments

None

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2018-175, 2018.

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