Atmos. Meas. Tech. Discuss.,
doi:10.5194/amt-2018-175-AC3, 2018

Atmospheric Measurement Techniques Discussions

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

N. Wang et al.

spyros@chemeng.upatras.gr

Received and published: 25 September 2018

The other reviewers have provided thorough (and I think valid) feedback, I have just one suggestion. It is very beneficial to the reader that kc values from the disturbed chamber have been quantified before and after an experiment, and that a clear increase is observed afterward (Fig. 8). This is not so for the undisturbed experiment. Could the authors offer some suggestions of the process causing this increase in kc during the disturbed chamber experiment?

The fact that k_c became drastically time-dependent within the time frame of a 4-hr experiment is most likely attributed to the increased electric field within the chamber after the maintenance of the room (Section 4.5). Repeated contact with the Teflon walls

during the maintenance probably led to charge build-up on the walls. The change in the loss rates suggests a change in the electric field in the chamber during this experiment. This could be due to additional charge build-up or redistribution of the charges as the experiment progresses (lights are turned on and off, the chamber walls move due to the air motion from the temperature control system, etc.). Our main point in this section is that when there is a strong electric field in the chamber, it can also vary with time making the corrected results of the experiments quite uncertain. We have added a brief discussion of this point in the revised paper.

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