

Interactive comment on “Measurement of ozone production sensor” by M. Cazorla and W. H. Brune

Anonymous Referee #2

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This paper describes a novel instrument to measure the ozone production rate. In general, it is difficult to evaluate the ozone production rate because ozone production and destruction are complex web of chemical and meteorological factors. Therefore, it is important to separate between chemical and meteorological factors in order to evaluate the ozone production rate more accurately. The MOPS can measure the ozone production rate in terms of chemistry.

The authors state detailed description and evaluation of the instrument in terms of both experiment and theory. In addition, they also describe current uncertainty and limitation to use the instrument. The result of the field test would be reasonable (at least qualitatively), considering past knowledge. Therefore, I recommend the manuscript to be published in AMT. However, it is necessary to revise at some points. It should be noted that I do not write comments duplicated with the Anonymous Referee #1.

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Specific comments:

1. Page 3345, line 18: "therefore, to is to" → "therefore, is to"
2. Page 3346, line 9: "polyethermide" → "polyetherimide"
3. Section 2.3.5: The authors evaluate artifact due to high relative humidity in terms of NO₂ loss. However, I think only NO₂ does not cause the artifact. Uptake of HO₂ radicals on the surface of the Teflon inner wall could accelerate under high relative humidity. This might be cause the underestimation of the ozone production rate. In addition, although the authors recognize HONO formation by NO₂ loss on the Teflon surface, they do not discuss the photochemistry after HONO off-gassing, which could cause "artifact" formation of OH radicals.
4. Page 3355, line 11: The authors describes the detection limit of the instrument. I think the authors should also state S/N ratio to determine the detection limit.
5. Page 3356, line 5: The authors discuss the uncertainty using the slope obtained by Fig. 3. It appears that the intercept for the regression line in Fig. 3 is significant. What is the intercept mean?

Interactive comment on Atmos. Meas. Tech. Discuss., 2, 3339, 2009.