

Interactive comment on “**Technical note:
Evaluation of standard ultraviolet absorption
ozone monitors in a polluted urban environment”
by E. J. Dunlea et al.**

Anonymous Referee #2

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The paper presents a very detailed and useful study on the quality of ozone measurements by standard UV monitors operated in networks and the authors are to be congratulated for the detailed work and thorough analysis. I would like to emphasise a few points which I would like the authors to consider before publication.

1. In practice neither DOAS nor FTIR can be "considered absolute", given the fact that the spectra are analysed with the help of reference spectra. Therefore, an assessment of the accuracy of DOAS and FTIR must be included before using these instruments as reference for the evaluation of the UV monitors.
2. The authors mention that the ozone monitors are being regularly "calibrated". I

find this statement very misleading. UV monitors apply optical absorption at 254 nm, at wavelength at which the absorption coefficient of ozone is probably much more accurately known than any of the reference spectra used in DOAS. It would thus be good to make the point in the paper that ozone monitors must not be calibrated (no matter what the different standard procedures say). The disagreement with a reference monitor is usually due to contamination of the instrument or misalignment of its optical components. Both effects should be corrected by cleaning or alignment but not via changing the "apparent" absorption coefficient of ozone. It would be helpful in this context to revisit the laboratory notes of the monitors in order to identify (and possibly quantify) the effects caused by such "recalibrations" on the comparison.

3. The interferences might be different for ozone monitors employing different types of scrubbers. Was this investigated?

4. I would like to see more scatter plots like then one in Fig. 4, rather than having everything condensed in a Table with the results of the correlation.

5. The authors should try to be somewhat clearer on what they think is the major cause of the interference, e.g. fine particles, aromatic VOCs or their photochemical degradation products. It is stated that average mixing ratios of aromatic VOCs were around 15 ppb in the morning and 30 ppb in the afternoon. This leads me to the following argument: If the primary VOC were responsible for the deviation, it should be visible in the morning as well (about have the effect (in ppb O₃), which is not the case, however. Doesn't this provide a strong argument for photochemical oxidation products to be the cause for the overestimation observed in the afternoon? The concluding sentence on page 2261, line 23 is not clear to me at all, at least not in the context what has been stated a few lines above. Please review this sentence in the context of my comment above.

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