

## ***Interactive comment on “Intercomparison of measurements of NO<sub>2</sub> concentrations in the atmosphere simulation chamber SAPHIR during the NO<sub>3</sub>Comp campaign” by H. Fuchs et al.***

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**Comment** pg. 2544 line 7, "This interference..." presumably the percent interference of HONO in an NO<sub>2</sub> measurement depends on the ratio of HONO/NO<sub>2</sub> in ambient air. The ratio used for this calculation could be specified here.

**Response** The referee is correct that the interference depends on the HONO/NO<sub>2</sub> ratio. However, we only notice the yield of NO from HONO photolysis in the photolytic converter, which is 5% of the yield of NO from NO<sub>2</sub> photolysis. Because of the small yield, HONO is not a significant interference for the detection of NO<sub>2</sub> by CLD for typical atmospheric ratios of HONO/NO<sub>2</sub>. We rephrased the sentence, in order to make this

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point clear: "The wavelength averaged quantum yield of NO from HONO photolysis was determined numerically from the emission spectrum of the LEDs, and was found to be less than 5% of the quantum yield of NO from the photolysis of NO<sub>2</sub>."

**Comment** pg 2559 line 9, "...within the range of several ppbs" add the percent deviation

**Response** The data suggest that the observed drift does not depend on the absolute NO<sub>2</sub> concentration. Therefore, a description as percentage value may not be adequate. We added a typical number in brackets in the manuscript: "(up to some ten percent of the absolute NO<sub>2</sub> concentration)"

**Comment** pg. 2560 line 27, change "was" to "were"

**Response** We thank the referee for noticing the mistake and corrected it.

**Comment** pg. 2564 lines 9 - 13. This section is confusing. Line 10 change "smaller" to "lower" or "worse". Line 12 change "observed increase" to "this discrepancy" or "this difference" or "the difference in precision between the two versions"

**Response** We rephrased the section as suggested by the referee.

**Comment** Figure 5. The authors might consider log-log axes for each panel allowing readers to more easily discern the overall range of NO<sub>2</sub> concentrations used during the experiments.

**Response** We changed the the axes of Figure 5 to a logarithmic scale.

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