

Interactive comment on “Quantification of nitrous acid (HONO) and nitrogen dioxide (NO₂) in ambient air by broadband cavity-enhanced absorption spectroscopy (IBBCEAS) between 361–388 nm” by Nick Jordan and Hans D. Osthoff

Anonymous Referee #2

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The manuscript describes a new instrument for the detection of HONO using cavity enhanced absorption spectroscopy. The paper is well written and gives a detailed description of the detection method. It is well suited for the journal. I recommend publication after addressing the following points:

I am missing a more detailed discussion of potential interferences from for example HONO formation / conversion of nitrogen oxide species in the inlet system. Did the authors do any kind of tests to exclude that HONO is artificially formed in the inlet system? The potential of such interferences are also not mentioned in the introduction

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(page 2 line 36).

It should be mentioned that interferences are detected and corrected for in LOPAP instruments (page 2 line 33-35).

What was the purity of the NO used for the production of NO₂ by ozone titration? Was there any artificial signal observed from impurities in the NO cylinder (page 7, line 180)? What is the precision and accuracy of the conversion efficiency (the number of digits given here suggests a very high precision) (page 8 line 217)?

Are the measurements in Fig. S4 examples for a typical measurement or can the measurements repeated with high accuracy that always the same concentrations are observed (page 8 line 221-225)?

Did the authors have a closer look, if the intercept in the regression for lab measurements holds for low NO₂ values (page 10 line 290)? For ambient air measurements, this would be a significant source of errors, but might be here due to the large range of values here. Was the GNOM instrument running in parallel also during ambient air measurements (section 3.8)? If so could the authors show the correlation of NO₂ with the HODOR instrument? I would prefer to see the regression analysis in the main paper.

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