

Interactive comment on “A portable, robust, stable and tunable calibration source for gas-phase nitrous acid (HONO)” by Melodie Lao et al.

Anonymous Referee #2

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Lao et al. present the design of a HONO calibration source suitable for field use. The manuscript gives a detailed description of the design of the source and extensive information on its performance. The paper solves a challenge that the community currently faces, the lack of reliable HONO calibrations of in-situ instrument. It is thus timely and highly relevant.

Overall the paper is very well written and informative. It provides all the details needed for the community to reproduce the study and, most importantly, build their own HONO calibration source. I did not find any real issues with the manuscript, and my more detailed comments below are just requests for some minor clarifications. Overall, the manuscript is well suited for publication in AMT, and I recommend for publication after

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a few minor clarifications.

- As water bath operates at 40C producing a RH of 50%, I am wondering if there is an issue with condensation once the air flow cools down while exiting the oven and/or instrument. This may be especially relevant if the system is used in cold climates. Could you please comment on this in the manuscript?
- Could you explain in the manuscript how you determined relative humidity? Was it measured or calculated from the saturation vapor pressure and the gas flows? In the latter case, did you check that the calculated RH is in fact correct?
- You mention that the system has been found to be stable for approximately one month. Could you clarify if this means that it yielded a constant HONO concentration for this time period, or was there a drift in the concentration due to aging of the NaNO₂ reaction device?

Could you comment on whether the length of the tubing between the source and the HONO instrument (or NO_x instrument) has an impact?

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