

Atmos. Meas. Tech. Discuss., referee comment RC2
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Comment on amt-2022-277

Anonymous Referee #1

Referee comment on "Development of multi-channel whole-air sampling equipment onboard an unmanned aerial vehicle for investigating volatile organic compounds' vertical distribution in the planetary boundary layer" by Suding Yang et al., Atmos. Meas. Tech. Discuss., <https://doi.org/10.5194/amt-2022-277-RC2>, 2022

The authors describe the design and initial tests of a new miniaturized whole air sampling system designed for a small unmanned aerial vehicle. They describe the design and procedures for collecting the WAS and compare the sampling efficiency to traditional electro-polished canisters. The results are of good use to the broader scientific community. The manuscript is well-written and should be published with only minor corrections.

General comments:

- The quartz samplers are the unique component of this system. I had a few more questions that could be addressed in the manuscript.
 - Are the quartz samplers completely custom-made, or were they modified from commercially available glassware? If so, who manufactured or build the quartz samplers?
 - It's unclear when and how the PTFE stopcock is unscrewed. I assume the stopcock is unscrewed manually after the sampler is connected to the solenoid valve. It doesn't state that there were any mechanical means to remotely open the PTFE stopcock while in flight. If that is the case, then please elaborate on those details.
 - Is there a comparable stainless steel canister that you could include in comparing the weight/volume of the quartz samplers? How much weight are you saving if you installed small stainless steel samplers rather than quartz?
- It is common to add water vapor during the final stages of cleaning whole air samplers to help further passivate interior surfaces with a few monolayers of clean water. See references for U.S. EPA methods TO-15 as an example. Was that done here?