

Interactive comment on “Integration and calibration of NDIR CO₂ low-cost sensors, and their operation in a sensor network covering Switzerland” by Michael Mueller et al.

Anonymous Referee #1

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The authors present here an excellent evaluation and use-case demonstration of a low-cost CO₂ sensor platform and an observing network comprised of said sensors. I think the work presented here is very thorough and covers all the bases needed to determine the usefulness of data archived by this network.

I have no major issues/concerns or comments but I have a couple of small things that I would like the authors to think about / comment on in a response:

1) You mention how important pressure measurements are, eg. in the description of how the ideal gas law is used to get CO₂ mole fractions. While the methodology of using adjusted sea level pressure from a nearby meteorological station and interpolat-

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ing from the CO₂ sensor height above ground level is probably sufficient, I can't help but wonder why air pressure measurements are not made as part of the sensor package? There are multiple small, low-cost pressure sensors that would be by far the most accurate measurements in the package (sub 1 hPa accuracy). Perhaps something to include in the second-generation of the instrumentation package.

2) What are the theories / reason(s) for why there are sudden large jumps in the reported CO₂ values from the sensors? Is it degradation in the IR lamp/sensor? I would think generally that would be more gradual than seemingly instantaneous. Or are there other failures that still allow for usable observations, but need that offset correction?

Overall, I think this is an excellent study and look forward to the final published version soon.

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