Comment on amt-2021-433
Laurent Spinelle (Referee)

Referee comment on "Long-term behavior and stability of calibration models for NO and NO$_2$ low-cost sensors" by Horim Kim et al., Atmos. Meas. Tech. Discuss., https://doi.org/10.5194/amt-2021-433-RC2, 2022

Very interesting paper and very interesting work, particularly on this rather new subject with such a very long-term experimental data base. The work carried out is presented in a very thorough way, which in a way do not help for a fast reading but help the interested reader to fully understand the work. Congratulations to the author for this work. Only few comments and questions below:

-Line 64: "two identical electrochemical" what do you mean by identical? are they coming from the same batch? or is it only that they are the same model?

-Line 64-65: "relative humidity sensor and a temperature sensor" is this a unique sensor? in this case maybe you can write "a combined relative humidity and temperature sensor".

-Line 153: "For evaluation of the sensor calibration performance", I think 1 the is missing at the beginning of the sentence "For the evaluation of the sensor calibration performance"?

-Line 168: "An schematic", only a typo "A schematic".

-Paragraph 3.1.2: did you considered to filter based on the manufacturer's limit of detection or one you could have evaluated with some lab test ? in fact, it is known that at low ambient air concentration (10-15ppb) sensors response is dominated by noise or interference.
the penetration of raindrops into the sensor units may cause significant disturbance of the sensor signal", do you mean disturbance on the electronic components?

"lower, medium and higher NO2 levels", you should maybe give your range of concentration as those categories may vary a lot from country to country.

Do you consider the contrast you are pointing out between NO and NO2 can be inked to the difference between the gaseous species involved and there sensitivity to interferent ? e.g. O3 is a well-known interferent for NO2 sensors which can impact drastically the data quality, in particular in the filtered sensor version for which the filter efficacity depend on the O3 level, whereas this kind of strong interference are less common for NO sensors.