Response to comments on “Machine Learning Calibration of Low-Cost Air Quality Gas Sensors” by Reader.

The two papers below provide performance metrics relevant to the interpretation described in this paper and show that excellent calibration metrics can be achieved with a physically interpretable model.

A.R. Winter, Y. Zhu, N.G. Asimow, M.Y. Patel, and R.C. Cohen, Sustained Performance of Low-Cost Air Quality Sensors in Long-Term Deployments , ACS Sensors, 10.1021/acssensors.5c00566, 2025.

A.R. Winter, Y. Zhu, N.G. Asimow, M.Y. Patel, and R.C. Cohen, A Scalable Calibration Method for Enhanced Accuracy in Dense Air Quality Monitoring Networks, https://doi.org/10.1021/acs.est.4c08855, ES&T 2025. see Table 4 for a more comprehensive list of others who have worked on the issue of LCS performance metrics.

We thank the reader for this comment and the references provided. We included these references in the introduction section of our manuscript: “Recent studies have also shown that good calibration performance can be achieved using physically interpretable calibration approaches and scalable methodologies for dense sensor networks (Winter et al., 2025a; Winter et al., 2025b). To do so, one needs to collocate the LCSs with respective reference instruments for a certain amount of time to gather data for training the calibration models. The present study complements this approach by evaluating how ML methods can improve measurements of LCSs and systematically investigates practical calibration strategies, including what are the training duration, sampling methodology and calibration frequency, for improving their operational deployment.”

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