Optimizing co-location calibration periods for low-cost sensors

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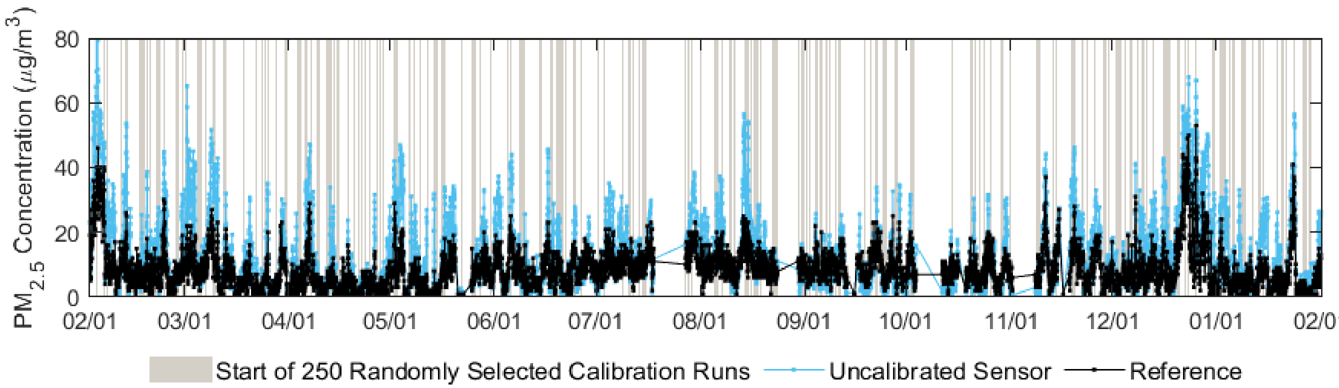
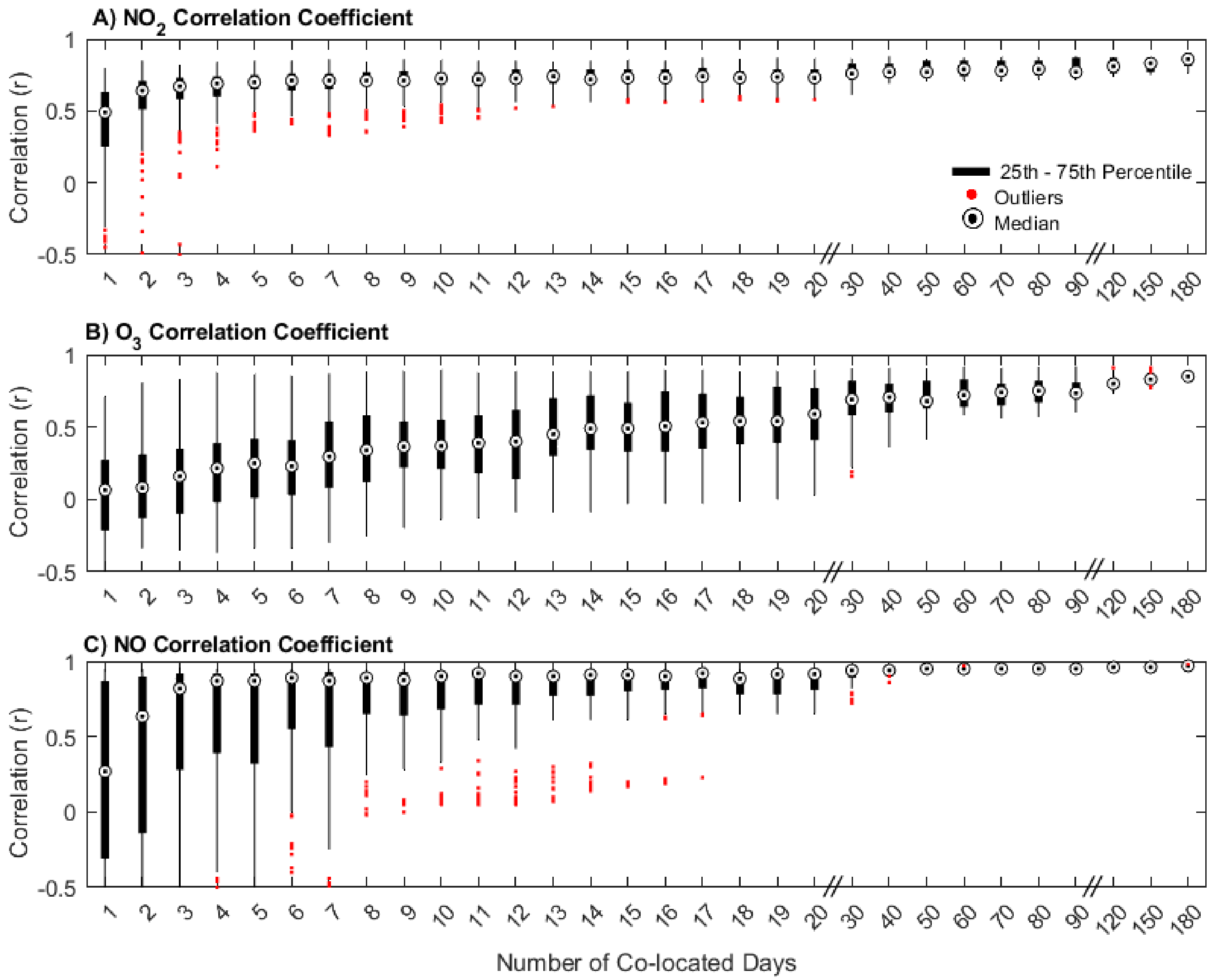
Supplemental Figure 1. The start time of 250 randomly selected 24-hr calibration runs.



Supplemental Figure 2. The potential range of Pearson correlation coefficients (r) for three low-cost sensors (NO_2, O_3, and NO) by co-location length. A calibration length of 1 day indicates that a random 24-hour period was selected out of all available days between February 2019 and February 2020. The correlation for a given test calibration period was determined by comparing the 1-hour averaged reference and the corrected sensor data (using that calibration) across all days not included in the calibration period.



Supplemental Figure 3. Comparison of two potential one-week calibration periods corresponding to Figure 3. These were selected to illustrate the range of potential RMSE values that can result from using different periods of the same co-location duration. In the example here, “Calibration Period 1” yielded more accurate concentrations (shown in green; RMSE = 3.1 μg/m^3), while “Calibration Period 2” performed poorly when considered across the whole evaluation period (shown in red; RMSE = 19.5 μg/m^3).