Supplemental Information for

**Evaluation of a Low-Cost Aerosol Sensor to Assess Exposures to Swine Dust**

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Table S1: Percent Bias in Mass Concentration Estimated with the DC1100 Using Physical Proprety Method (Method 1) for Different Particle Diameter Assumptions

|  |  |
| --- | --- |
|  | **Percent Bias** |
| **Particle Diameter (µm)** | **DC1100 #1** | **DC1100 #2** | **DC1100 #3** | **Average** |
| **a. SDC ON** |
| 3 | -38.2 | -28.4 | -16.2 | -27.6 |
| 4 | 46.5 | 69.6 | 98.5 | 71.6 |
| 3.6 | 6.8 | 23.7 | 44.7 | 25.1 |
| 3.4 | -10.0 | 4.2 | 21.9 | 12.0 |
| 3.2 | -25.0 | -13.2 | 1.6 | 13.3 |
| 3.3 | -17.7 | -4.8 | 11.5 | 11.3 |
| 3.32 | -16.2 | -3.0 | 13.5 | 10.9 |
| **3.34** | -14.7 | -1.3 | 15.6 | **10.5** |
| **3.36** | -13.2 | 0.5 | 17.7 | **10.5** |
| 3.38 | -11.3 | 2.3 | 19.8 | 11.1 |
| **b. SDC OFF** |
| 3 | -34.4 | -22.9 | -23.2 | 26.9 |
| 4 | 55.4 | 82.7 | 82.0 | 73.4 |
| 3.6 | 13.3 | 33.2 | 32.7 | 26.4 |
| 3.4 | -4.6 | 12.2 | 11.8 | 9.5 |
| 3.2 | -20.4 | -6.5 | -6.8 | 11.2 |
| 3.3 | -12.7 | 2.6 | 2.2 | 5.8 |
| 3.32 | -11.1 | 4.5 | 4.1 | 6.6 |
| **3.28** | -14.3 | 0.7 | 0.4 | **5.1** |
| 3.26 | -15.9 | -1.1 | -1.5 | 6.1 |
| **c. All (SDC ON and SDC OFF)** |
| 3 | -37.0 | -26.3 | -19.0 | 27.4 |
| 4 | 49.4 | 74.7 | 91.9 | 72.0 |
| 3.2 | -23.5 | -10.6 | -1.7 | 11.9 |
| 3.4 | -8.3 | 7.3 | 17.9 | 11.1 |
| 3.3 | -16.1 | -1.9 | 7.8 | 8.6 |
| **3.32** | -14.6 | -0.1 | 9.7 | **8.2** |
| 3.34 | -13.0 | 1.7 | 11.7 | 8.8 |

Bold indicates the optimized (smallest) percent bias

Table S2: Slope and Intercept Analysis for Regression Method (Method 2) to Find Relationship between Size and Mass Concentraions

|  |  |  |
| --- | --- | --- |
| **Trial** | **Slope (µg/m3)** | **Intercept (µg/m3)** |
| 1 | 0.053 | 48.1 |
| 2 | 0.055 | 46.9 |
| 3 | 0.055 | 44.8 |
| 4 | 0.054 | 49.1 |
| 5 | 0.057 | 43.5 |
| **Mean** | 0.055 | 46.5 |
| **Standard Deviation** | 0.001 | 2.3 |
| **Coefficient of Variation (std/avg)** | 2.6% | 4.9% |