

## Comments on Revised Manuscript ar-2024-39

### **Title: Impact of Sampling Frequency on Low-Cost PM Sensor Performance including short-term temporal events in high PM environments**

The revised manuscript was greatly improved thanks to reviewer comments with better clarity and suitable additional information about power consumption.

Some minor points should be accounted for to give the reader the best understanding of the results.

#### **Page 6, § 3**

The authors should give some more details about the comparison between the five LCS measurements to justify further analysis based on only one unit. In particular:

- Is the CV=4.38 % corresponding to just one daily average comparison is representative of other daily periods?
- Does the US EPA standards mentioned:  $SD < 5 \mu\text{g}/\text{m}^3$  and  $CV < 30 \%$  are especially related to intercomparison between same instruments? Does the  $CV < 30\%$  should be related to only one daily measurement serie or to a 30 days serie?

Give the precise reference for the US EPA standard in the References list P14:

Duvall, R., A. Clements, G. Hagler, A. Kamal, Vasu Kilaru, L. Goodman, S. Frederick, K. Johnson Barkjohn, I. VonWald, D. Greene, AND T. Dye. Performance Testing Protocols, Metrics, and Target Values for Fine Particulate Matter Air Sensors: Use in Ambient, Outdoor, Fixed Site, Non-Regulatory Supplemental and Informational Monitoring Applications. U.S. EPA Office of Research and Development, Washington, DC, EPA/600/R-20/280, 2021.

#### **Page 8 §3.1**

Give definition for MAE

#### **Page 9, figure 4**

I understand, figure 4 corresponds to an average of a define number of 15 s measurement taken at the mid-point of the sampling frequency. So each point fig 4a corresponds to an average of 240 values, fig 4b average of 12 values, fig 4c average of 6 values, fig 4d average of 4 values, fig 4e average of 2 values and fig 5c single value.

Surprisingly the data are not more scattered when single or two values are considered for the hourly average. Could the authors add more comment on that in the text § 3.1. May be also starting to introduce fig 5 in § 3.1 showing the 15 s raw data on a one-hour serie with the different averaged values.

#### **Page 12, line 205**

Recall that the value 4.38% corresponds to coefficient of variation between five SPS30 units on single daily analysis.

#### **Page 12, line 209**

Precise “minimal impact on the hourly measurement accuracy”