

Atmos. Meas. Tech. Discuss., referee comment RC2
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Comment on amt-2021-136

Anonymous Referee #1

Referee comment on "Assessment of real-time bioaerosol particle counters using reference chamber experiments" by Gian Lieberherr et al., Atmos. Meas. Tech. Discuss.,
<https://doi.org/10.5194/amt-2021-136-RC2>, 2021

Review of "Assessment of Real-time Bioaerosol Particle Counters using Reference Chamber Experiments" by Lieberherr et al.

General Comment

The present study performed a direct comparison of three different bioaerosol devices (i.e., the WIBS-NEO, Plair Rapid-E, and Swisens Poleno) to assess their performance in counting and sizing aerosol particles, as well as their accuracy of their fluorescence measurements. The authors highlighted the different strengths and weaknesses of the three devices for the evaluated particle size range. This is well designed study and the manuscript is well written. The results are valuable for the aerosol community and provides important information for future studies. The manuscript can be accepted after the following minor comments are properly addressed.

Minor Comments:

- I do not see the point to have Table 3 and Figure 2 as they show the same results.
- Figures 3, 4 and 6. I am wondering how many experiments were performed to get each PSD.
- Figures 7 and 8. I am wondering how many experiments were performed to get these figures.
- Lines 224-225: "appear at around double the nominal size". I consider that it is quite far from double. Can the authors be more precise here?
- Lines 249: "is measured in all the three devices". I suggest to changes this to "two devices" and to add the text from section 3.3.1. I mean, I consider useless to have subsection 3.1.1.
- Lines 250: "with 2 μm diameter". I am wondering why at this specific size only?

Technical Comments:

Line 17 and along the text: I suggest to organize the references chronologically.

Line 26: Define WIBS.

Line 41: Add a reference after "methods".

Line 95: "(Forde et al., 2019)" should be Forde et al. (2019).

Line 144: Add the model and manufacturer of the used fluidized bed generator.

Line 146: Should "bioaerosol devices" be replaced by "DUTs".

Line 148: Should "bioaerosol monitors" be replaced by "DUTs".

Lines 200, 229 and along the text: Table(s) and Figure(s) should have a capital "T" and "F", respectively.

Lines 251: "(Könemann et al. (2018))" should be "(Könemann et al. 2018)".

Figure 8: The panels are cut-off at the bottom.