

Comments on amt-2018-301, "Derivation of Flow Rate and Calibration Method for High-Volume Air Samplers"

Overall I think this paper does a fine job showing the derivations of the equations necessary for the calibration of a high volume sampler. I think the paper as a few major shortcomings that I outline below.

Specific Comments

- Firstly the manuscript fails to fully consider the body of work it is contributing to. While I understand it is impossible to encapsulate the very large body of work about Hi-Vol samples greater effort needs to be put forth to support statements made in the introduction.
- Similarly to above, and as mentioned in the interactive discussion section, very similar derivations have been discussed before. While this particular derivation has not been published in the peer-reviewed literature, further acknowledgements should be made to similar derivations.
- This paper has important applications for atmospheric measurements and I think the paper would greatly benefit from a discussion in the conclusions section addressing the implications surrounding an improperly calibrated Hi-Vol and the potential ramifications.
- This paper would greatly benefit from real data showing the application of this approach. I do not know if this data is readily available to the authors, but it would go a long way in illustrating the theory.

Technical Corrections

- Page 1 Line 16: The first sentence is phrased weird, suggest saying "collecting atmospheric environmental samples is inherently..."
- Page 2 Line 1: the Hi-Vol abbreviation has not yet been defined.
- Page 2 Line 24: They are usually called polyurethane plugs not tubes.
- Page 3 Line 2: Weird phrasing, suggest "Results may exhibit large variability due to errors in weighing..."