

***Interactive comment on “Determination of  
Aethalometer multiple-scattering enhancement  
parameters and impact on source apportionment  
during the winter 2017–2018  
EMEP/ACTRIS/COLOSSAL campaign in Milan” by  
Vera Bernardoni et al.***

**Anonymous Referee #2**

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This manuscript addresses relevant scientific questions within the scope of AMT, notably allowing for a better evaluation of multiple-scattering enhancement parameters affecting multi-wavelength Aethalometer measurements. Its overall presentation (including the title, the abstract and the figures) is appropriate, clear and globally well structured. My only major concern is related to the timely relevance of obtained results, considering that the filter tape used here in relatively new AE33 device is no longer in use. This shall be stated much more clearly in the article. Authors should

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also discuss the efficiency of this former type of filter tape for accurate BC source apportionment in light of the results they obtained here vs. reasons that eventually led the manufacturer to select another filter tape for AE33. In particular, do they consider that applying such a limited wavelength-dependence in C-AE33 values is fully sufficient to compensate for possible biases in BC source apportionment when using this type of filter tape ? And, conversely, what would be the quantitative impact of using a constant C-AE33 value in the present study ? As a minor comment, the manuscript would also benefit further explanations why the MWAA model could not be applied here to data obtained using the MWAA instrument, and, more importantly, if this is always the case ? Finally, authors could also clarify if they would generally recommend to use the PP\_UniMI datasets with the PP approach or with the PaM approach.

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Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2020-233, 2020.

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