Review: Evaluation of mass measurement techniques for soot with different size distributions and OC/TC contents

After a long process, including several exchanges of comments between the authors and the reviewers, I believe that the manuscript has reached a sufficiently high level to be accepted after minor revision. My specific comments are as follows:

General:

I agree that the gravimetric measurement on filters is important in order to comply with Standard 16450. However, in the description of the experiment as well as in Figure 5, it should be clearly stated why the comparison between the gravimetric method and the TEOM is performed at all (i.e., the standard method as the reference, and on the other hand the verification of the diluter performance and the determination of losses along the different branches). It should also be clearly explained why, in your opinion, heating the sampling line to 180 °C does not significantly influence the mass measurements in either branch of the experiment. I did not find this explanation anywhere in the manuscript.

Abstract:

The abstract contains many abbreviations; some are explained in brackets, while others are not. Please minimize the use of abbreviations in the abstract, and provide their definitions in the Introduction.

Instead of listing the names of all instruments, I suggest using a more general sentence such as:

> "...we assessed the mass concentration using four different online instruments, including the gravimetric method, the aerosol electrical charging method, the filter photometry method, and the aerosol mobility method."

The full names of the instruments should be presented in the Introduction.

Line 8:

Replace "OC/TC" with "organic-to-total-carbon (OC/TC) ratios "

Line 10:

Replace "The OC/TC ratio was also determined" with "The OC/TC ratio was determined by the thermal-optical method."

Figures:

Figure 2 is not referenced anywhere in the manuscript text. Please add an explicit in-text reference.

Figure 3 presents a schematic illustration of the operating principle of a filter photometer. However, it does not depict the dual-spot loading compensation principle, although the text states that "the MA300 aethalometer employs the dual-spot technology."

This inconsistency should be resolved in one of the following ways:

Update the figure caption: Modify the caption to explicitly state that the figure shows only the general operating principle and not the dual-spot technology.

Update the schematic: Adapt Figure 3 so that it correctly illustrates the dual-spot concept, ensuring consistency between the explanation in the main text and the visual representation.

Figure 8 should be split into panels (a) and (b).

Both subfigures must be referenced individually in the main text. In Figure 8(b), the grey triangles representing PPS corrected data are not visible at lower mass concentrations. The symbol style should be adjusted.

Lines: 308-311:

The paragraph 308–311 is written imprecisely, as the phrase “becomes reliable” is misleading. What you are referring to in this paragraph is that the σ_{ATN} correction becomes linear in the UV range below 1.3 L/min (you should propose a correction factor for σ_{ATN} (UV, <1.3 L/min)), and in the IR range between 1.3-1.5 L/min (correction factor for σ_{ATN} (IR, 1.3-1.5 L/min). The deviation from linearity may be a consequence of changes in the MAC value as well as the multiple-scattering parameter.