

Dear Editor,

we would like to approach you concerning an oversight which we found in the logic of the flow chart in Figure 8 of the paper, and additionally request two minor corrections in a Figure caption and in equation 9.

Figure 8 and corresponding text in section 7.1:

The measured size distribution is needed only for the calculation of the angular correction C_{phase} .

It is more logical and clear to first ask the questions in the following order:

- „Is the aerosol type known?“
- „Are the particles spherical?“
- „Is the size distribution measured with OPSs over a relevant size range?“

For this reason, we kindly ask you whether Figure 8 can be replaced with the attached version. The changes made to Figure 8 do not change the paper's conclusions and message, but improve clarity in the recommendations. For consistency with the new figure, we also request a few minor changes to the text of section 7.1.

In the following, we provide a detailed description of the changes made to Figure 8:

- The logical oversight was corrected by moving the decision box containing the question „Is the size distribution measured with OPSs over a relevant size range?“ after the decision boxes containing the questions „Is the aerosol type known?“ and „Are the particles spherical?“ when the answer is yes. The angular correction $C_{\text{phase(c)}}$ is applied if the answer is yes. If the answer is no, the C_{SAE} is used, and the uncertainty is decided based on the aerosol type. The uncertainty of the angular correction C_{SAE} is 33% for highly absorbing particles and 13% for weakly absorbing particles. The 13 % of uncertainty for weakly absorbing particles can be read in Figure 7 column 4, row 3.

- The first decision box question was changed from "Inlet with sub- μm cut-off?" to "Does the inlet have a sub-micrometer cut-off? or Is the aerosol scattering dominated by sub-micrometer particles?" The second part of the question was added to be consistent with the manuscript text on page 22, lines 35-36. We changed the word "aerosol population" to "aerosol scattering" to avoid misunderstanding, since the aerosol population is always dominated by sub-micrometer particles when the number size distribution is considered (while it may be different when the scattering properties or the volume is considered).

- If the answer to the question „Is the aerosol type known?“ is no, the C_{SAE} correction is applied with 33% uncertainty because it was the largest uncertainty we found. „For large absorbing aerosol“ was removed from the last box on the right because knowledge on the aerosol type is not needed.

- The questions in the decision boxes have been changed to complete sentences.

In the following, we provide a detailed description of the changes to the text of section 7.1:

- Page 23, line 8: We want to add: „and 13 % for slightly absorbing particles.“
- Page 23, line 9: We want to change the order of items to: „the aerosol type is known, the particles are spherical, and the size distribution is measured over a relevant size range,“
- Page 23, line 17-20: We want to change the sentence to „- the aerosol type is known, and the particles are mineral dust, the angular correction C_{SAE} can be used with uncertainty 13 %.“
- Page 23 line 25-27: We want to change the sentence to „- the aerosol type is known to be non-spherical, but it is not mineral dust, more investigation is needed on the angular correction.

Caption of Figure 1:

In addition, we would like to add the following sentence at the caption of Figure 1 in order to improve clarity to the instrumental set up: „The dilution chamber was operated at a pressure slightly above ambient. “

Equation 9:

We realized that the accuracy of the number reported is too high. Therefore, we would like to ask you to round the number to 1.06.

We think that these changes significantly improve the clarity of Figure 8 and section 7.1, the operating conditions during the campaign, and correct equation 9. We hope that it will be possible to implement the proposed changes.

Sincerely,

Marilena Teri and Bernadett Weinzierl