

Interactive comment on “Reducing uncertainties associated with filter-based optical measurements of soot aerosol particles with chemical information” by J. E. Engström and C. Leck

Anonymous Referee #2

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The manuscript presents a new approach to correcting the well-documented problems with filter-based measurements of black carbon concentrations - namely by using chemical information as an additional proxy measurement for non-BC scattering by the aerosol.

The goal of the manuscript is intriguing, but unfortunately it was poorly developed. There is no clear demonstration that this new approach is in fact of value - measurements corrected by this new method and more traditional approaches are compared, but without any information suggesting which result is more accurate. As only bulk

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inorganic chemical properties are measured the related assumptions (e.g. MSE, lack of non-detected inorganic materials such as mineral dust etc...) are so significant as to likely overwhelm any value from the additional measurement dimension. Thus I am not convinced that there is any reason to perform this analysis (for the reasons stated in the manuscript).

I do not believe that, with the data set shown, the authors will be able to support their statements about reducing uncertainty in filter-based measurements of BC concentrations.

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