

## ***Interactive comment on “Source-specific light absorption by carbonaceous components in the complex aerosol matrix from yearly filter-based measurements” by Vaios Moschos et al.***

### **Anonymous Referee #2**

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This manuscript by Moschos et al. carefully described light absorption properties from various sites and sources. They also provide calculations of the optical properties. By combing the experimental and theoretical results, they provide useful conclusions regarding brown carbons and BC lensing effects. These results are useful for further studies regarding radiative forcing and climate. Thus, I recommend this manuscript to be published in ACP. This study provides careful and comprehensive data and figures. All figures are carefully prepared and look nice. On the other hand, the figures include too much information, and I had a difficult time interpreting the meanings. For example, Fig 8 includes Y axis, X axis consisting of two parameters, color and shape of each plot, contour lines, and reference lines (dot line). Although I agree that the figures are useful

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and accurate, they are complicated to understand. It is just a suggestion, and the current figures are fine as is but may be improved by simplifying.

Specific comments:

Line 329: The reference by Alexander et al. (2008) is not adequate here because the literature does not show tar-balls but only discussed the possibility of tar-balls.

Line 330: inorganic component. Fig S13 shows a Fe-bearing particle, which may not be a representative of “inorganic” particles.

Line 330: “Pseudospherical” can be a deformed particle that had been liquid in air and deformed on the filter when collected.

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Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2020-1293>, 2020.

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