

Reviewer #2:

I think the authors have responded well to my comments with the one exception listed below.

We would like to thank the referee for the careful review. We very much appreciated the suggestions and comments that helped us significantly improve the manuscript.

Page 5 lines 16-18 – it's still unclear to me how the extinction is calculated from the LOAC. The authors provide two different refractive indices (RI) but no indication is given of which RI is used when to determine extinction from the LOAC size distributions. The second RI ($2+0.6i$) is basically the value for 'pure' black carbon – it's not a realistic RI for atmospheric aerosol (except maybe at the tailpipe of a diesel vehicle). Are the Mie calculations done for both RI's? If so, which RI is depicted in the results in figure 6? Do the error bars reflect the range of the two RIs? Or is some fraction of the particle size distribution assigned to the first RI and the remaining particles assumed to have the second RI? What is the fraction? Is it constant? Is it size dependent?

We added these sentences in the LOAC description:

Mie scattering theory is used for liquid and transparent particles (refractive index = 1.45), and for solid and absorbing particles (refractive index = $2+0.6i$), separately. Aerosol extinction values are computed for these two different particle compounds. They represent the range within which the true aerosol extinction of the particle falls in. Finally, the LOAC aerosol extinction at 532 nm is determined by averaging these two extinction values.

We also added the following sentence to the Figure 6 caption:

Horizontal bars show the standard deviation of the CALIOP data and the LOAC aerosol extinction range of the two refractive indices used in the calculation of the aerosol extinction.