I appreciate the work the authors have put into this, and commend them on identifying an error in their model absorption data. However, my concerns regarding the presented MAC vs. BC observations persists. The authors' now note that dust might confound their results, to some extent, but they still have not really dealt with the uncertainties on their measurements and whether the apparent trand in Fig. 8 is real. That there is, apparently, 99.9% confidence that the slope is negative is not justified without consideration of the actual uncertainties on the individual data points. I cannot support publication of this manuscript.

The authors have still not included uncertainties in Fig. 8 on their individual MAC values. The absorption values associated with many of these data points are extremely close to the stated (estimated) detection limits (L159) of 0.75 1/Mm for 1 min averages. For example, [BC] = 0.04 ug/m3 and a BC MAC value of 25 m2/g (both within the range of measurements) the absorption would have been only 0.8 1/Mm. I have made this point previously, but the measurements lack error bars. Without error bars there can be no rigorous assessment of the relationship between the MAC and [BC]. The authors note that they have to throw out 90% of their data (L163) because it is below the detection limit. But I question whether the points here are even really above the detection limit. Or, more specifically, that their observations are not simply driven by noise. Further, because the authors filter for the detection limit this will introduce a negative slope because the detection limit for BC is lower than it is for absorption. A thought experiment. Given a normally distributed noise profile but a parameter that cannot physically be < 0 (such as is likely the case here), if noise dominates the observed variability for two parameters then the ratio between the larger of the two and the smaller of the two will increase as the smaller of the two parameters decreases. This can be shown using fictitious example data (see first figure below). Assume absorption = 1.4 1/Mm with a Gaussian noise profile with a FWHM = 0.4 and BC = 0.06 ug/m3 with a Gaussian noise profile with a FWHM = 0.02. Assume all variability is determined by noise. The ratio absorption/[BC] then has the following form (black points). This looks notably like the observations. If I then cut off all absorption measurements < 0.75 1/Mm the lower MAC values are cut off (red points). One can alternatively calculate a curve that represents the absorption-based threshold for determination of a given MAC value for a given [BC]. This curve is has the relationship MAC = 0.75/[BC], given the detection limit reported. I've overlain this on the authors figure (second figure below). This strongly suggests, at least to me, that the MAC vs. BC relationship is an artifact. I remain unconvinced that the variability in the authors MAC observations is not simply driven by noise and the fact that they are working close to their detection limit.

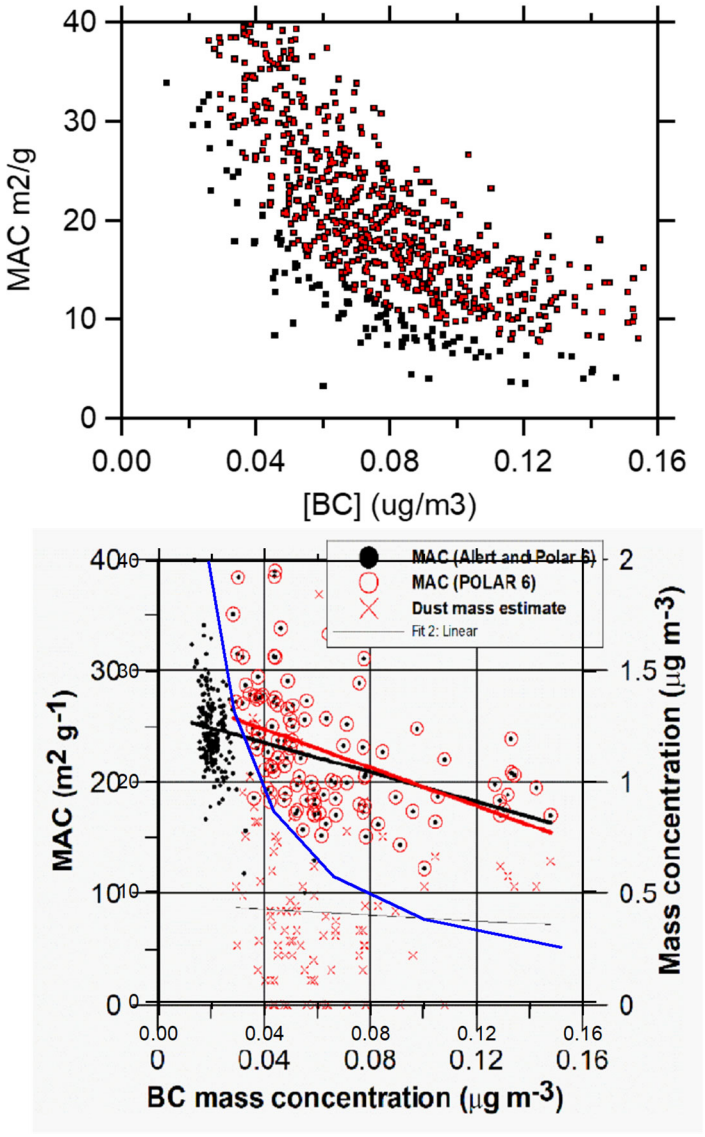

Figure: (top) hypothetical MAC vs. BC relationship given two parameters for which the variability is dictated entirely by Gaussian noise. (bottom) the MAC vs. BC curve that corresponds to the absorption detection limit, shown in blue, overlain on the authors' data.

L328: Fig. 9 does not show anything about coating thickness, as stated here. The figure shows rBC diameter vs. rBC concentration.

L335: Are the authors referring to Fig. 8a or Fig. 8b? It is not clear. If the former, the MAC does not "approach" the values from Fig. 5 at higher [BC]. If the latter, don't the MAC values from Fig. 8b derive from Fig. 5, thus necessitating a relationship between the two? Regardless, it is not clear to me what the authors' mean when they state "as in Fig. 6 for the model." Fig. 6 does not show MAC vs. BC.

L339: The authors now state that dust may have contributed 0.15-0.3 1/Mm absorption (there's a typo that gives the units as Mm^-2). At [BC] ~ 0.04 ug/m3 (from Fig. 8b) and with the low-dust "Allcore" and "Rshell" MAC values, the BC absorption should be 0.37 1/Mm or 0.52 1/Mm. The potential dust

absorption is significant in this context and can explain much of the differences in modeled and measured MAC and the apparent increase in the MAC with decreasing BC. If dust absorption = 0.15 1/Mm the MAC attributed to BC would be too large by 30-40%. If dust absorption = 0.3 1/Mm, the MAC attributed to BC would be too large by 57-81%. I do not find that the authors have made convincing arguments that allow them to rule out dust as a potential bias as they do on L341.

Fig. 11: There's an error in the legend, with the labels for the black and red absorption swapped. There is also a difference between the red curves in panel a and b, yet these should be identical.

Fig. 8: The caption says that the dust concentrations are shown for when [Dust] < 1.5 ug/m3. However, there are points on the graph for which [Dust] > 1.5 ug/m3. And in Fig. 8b the difference between the black and red lines is not indicated.