

In their rebuttal, McClure et al. didn't address points 6 and 7 of my first round comments (did I miss something here?). I consider both points to me major and important and hence, I ask them to address them again in this second round of revisions:

- 1) Title should bear the word “laboratory” since the observed results might not be applicable to real world fires. For e.g., something like: “Laboratory-based biomass burning particles from a wide variety of fuels: Part 1: Properties of primary particles”
- 2) The authors provide no explanation (beyond a hand waving argument) to back the statement “The contribution of coating-induced enhancements (i.e. lensing effects) to absorption by black carbon are shown to be negligible for all conditions”. Lensing or focusing of light to the core could also be possible with weakly light-absorbing coating materials such as brown carbon with low imaginary index of refraction. Such a coating would facilitate lensing in addition to itself absorbing. The only convincing way to declare that “no lensing” takes place is by looking at the internal field strength of a brown-carbon coated BC aggregate (see methodology in Chakrabarty and Heinson, Phys. Rev. Lett, 2018). I would like to see such a rigorous analysis performed (DDA or T-Matrix and not Mie-based core-shell) by the authors on a few BC aggregates coated with BrC vs non-refractory materials and convincing the reviewer and the community if indeed the “no lensing” claim is valid. If the authors cannot perform such an analysis, then I suggest that they remove all statements from the abstract and the main text regarding “negligible coating-induced enhancements (lensing effects)”. Instead, rephrase or replace the sentences with “brown carbon-coated BC particles yield absorption enhancements of x and y values...”