

Review of “Modeling global radiative effect of brown carbon...”

For my first major comment, the authors added clarification in Section 3. However, it is important to point out that their definition of BrC is different from the common definition in literature, which is a class of organic aerosols with both scattering and absorption (not only different from Brown et al., 2018). Especially the concept of absorption-only-no-scattering BrC is inconsistent with the experimental perspective. In order to avoid confusion, I suggest to state this difference also in abstract and conclusion, by clarifying that the developed module is for treating BrC absorption properties only. The added sentence “...the DRE from BrC is for light absorption only such that it can be directly compared to BC” seems to imply that BC is absorption only, which is not true. Please revise it.

For my second major comment, they added AOD comparison, but didn't address “...lacks of evaluation of the modeled aerosol absorption”. In particular, “ There is no model evaluation of aerosol absorption over the tropics where the BrC heating effect is suggested to be important. It would be useful to know how the modeled aerosol total and spectrally-dependent absorption compare with observations, i.e., AERONET data, with vs without BrC parameterizations. This would provide observational constraints for the calculated heating effects due to BrC and BC. “

For my third major comment, the response is acceptable.

All the minor comments are addressed.