Review of

"Parameterization of Single Scattering Albedo (SSA) and Absorption Angstrom Exponent (AAE) with EC/OC for Aerosol Emissions from Biomass Burning"

By Pokhrel et al.

General comments

This paper demonstrates a novel approach in parameterizing SSA and AAE for aerosol emitted from biomass burning using EC/OC ratio instead MCE. The parameterization using EC/OC and EC/(EC+OC) ratios were based on burning experiments of different kind of fuels, including Indonesia peat. The findings show that these parameterizations have better prediction for fuel with significant loadings of black carbon and/or brown carbon. Additionally, the parameterizations were able to predict SSA from biomass burning plume aging in Mexico.

Generally, the manuscript is well written. There are only several typos and some statements that need clarification (see technical comments). The authors carefully estimate the uncertainties of their methods and parameterizations. I only have couple questions that may need to be clarified and some information may need to be added.

Overall, I recommend publishing this manuscript after the questions are addressed.

Specific comments

1) Pg 3 Ln 25-26. The authors explain about observation of fire transitions from flaming to smoldering. It would be good to add information or clarify how was this done. Also how fractions of flaming to smoldering (Pg 5 Ln 28-30) were maintained during different experiments.
2) Pg 7 Ln 29. This statement about EC/OC depends more on burn conditions than fuel type can mislead. As it is shown in this study (Fig. 2), for certain fuels, such as peat, the different combustion types do not change EC/OC significantly. Therefore, fuel types do influence the EC/OC ratio.
3) Pg 8 Ln 24-26. The authors suggest that EC/(EC+OC) ration is able to predict AAE. I think the r of the least square fit is not that strong for this case (r=-0.79) different from fitting for SSA. The statement may need to be revised.
4) Pg 8 Ln 29-30. I think the RMSE values from fit of this study and fit by Liu et al. (Table 3) are not similar. They are about 20-30% different. The statement may need to be revised.

Technical comments

1) Pg 4 Ln 6. What does it mean "a canister filled with Perma-Pure"? Perma-Pure is a manufacturer name.
2) Pg 6 Ln 14. What is temperature of filter storage?
3) Pg 7 Ln 18-19. I am confused with this statement. Liu et al. provided parameterization only for 405 and 532 nm, and on Fig. 1, there is no black fitted line for panel C (660 nm). So what does 660 nm refer to?
4) Pg 9 Ln 22-23. This sentence is not finished?
5) Pg 10 Ln 10. Provide correlation plot and value of SSA at 660 nm and at 637 nm in SI.
6) Pg 10 Ln 22-25. In which table we can find the SSA and AAE for Indonesian peat and the other fuels?