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Interactive comment on “Dynamic light absorption of biomass burning organic carbon photochemically aged under natural sunlight” by M. Zhong and M. Jang

Anonymous Referee #2

Received and published: 26 September 2013

This paper presents to some unique experiments on brown carbon from biomass burning emissions and is a nice contribution to the field. It also presents nice experimental procedures for assessing the optical properties of the organic carbon.

I agree with the other anonymous reviewer that the conclusions for increases and decreases in MAC are not necessarily justified by the experimental results. It seems that there needs to be some more analysis to justify these conclusions. Included in this is the concept already mentioned by reviewer 1; blank chamber runs are important baseline to consider.

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The introduction is light on previous work. For example, treating BC and EC as equivalent, "BC is well known for its climate warming effect." "...dynamic evolution under atmospheric conditions." These examples should reference the most recent research that backs up these statements.

Can you be sure that collection of OC onto filters does not impact the properties you measure?

Section 3.1: This method of attribution of absorption contains uncertainties recently assessed by Lack and Langridge (<http://www.atmos-chem-phys-discuss.net/13/15493/2013/acpd-13-15493-2013.html>). Please spend some time assessing all of your uncertainties in this paper. For example, the figure 2 caption mentions how the uncertainty was determined but does not say what the uncertainty in each component.

P20786 L26: What has been reported? P20786 L27: Delete 'the resulting'. After "wood burning OC" and "emissions were", delete "was". P20786 L28: Delete "that exposure to" and make a new sentence "Natural sunlight was used as the radiation source". P20787 L16: 4 inches in diameter? P20789 L19: Wood burning particles can contain inorganics also. P20791 L14: Why did you choose 600nm for the end point of integration? P20792: L2: Better term than 'colorant'? P20792: L4: abundance of chromophores? P20793 L18: delete 'e' on levoglucosane

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 20783, 2013.

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