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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Organic composition of carbonaceous aerosols in an aged prescribed fire plume" *by* B. Yan et al.

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The authors describe a study of organic PM2.5 pollutants from a prescribed fire in the Atlanta area. This is a well written manuscript that presents useful data and analysis of biomass burning aerosol that is of interest to the ACP community. There are some issues that I would like to have seen addressed before the manuscript is published:

1. A central assumption in the study is that the airmasses sampled before, during and after the fire originated from the same area. To support this, the authors should show back-trajectories for the 3 day period to show that the "before" and "after" airmasses are from the biomass burning area (and if not, it should be discussed whether it is of concern for the analysis). A map of the sampling location

and its relation to the prescribed burns would also be very useful.

2. How "aged" is the biomass burning aerosol sampled in this study? Which aspects of the souce profile is expected to remain when the aerosol is additionally aged and diluted for a couple of days?

3. The authors state that relatively little information on speciation from aged biomass burning aerosol is available (in part because of the HULIS-like nature of the carbonaceous fraction). However, there is well-established literature on using other techniques, such as the Aerosol Mass Spectrometer (AMS), to identify and attribute biomass burning contributions to aerosol levels. It would be good to include a short discussion on such alternatives in the introduction.

4. A reference is required for the C/OC ratio used. Is 1.4 characteristic of biomass burning aerosol? Does the available speciation support this ratio? How does it compare to the C/OC from other techniques, like the AMS?

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 18015, 2007.