

Interactive comment on “Polar organic marker compounds in atmospheric aerosols during the LBA-SMOCC 2002 biomass burning experiment in Rondônia, Brazil: sources and source processes, time series, diel variations and size distributions”
by M. Claeys et al.

Anonymous Referee #1

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Review for "Polar organic marker compounds in atmospheric aerosols during the LBA-MOCC 2002 biomass burning experiment in Rondônia, Brazil: sources and source processes, time series, diel variations and size distributions" by Claeys et al.

General comments:

This manuscript reports the measurements of aerosol organic components in the Amazon basin. The emphasis was put on the characterization of polar tracer compounds

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such as levoglucosan (biomass burning), malic acid (oxidation of semi-volatile carboxylic acids), methyltetrosols and C5 alkene triols (isoprene oxidation SOA), and sugar alcohols (fungal spores) in the dry, transition and wet seasons. The authors have analyzed the day and nighttime samples from a size segregated high volume dichotomous sampler and a ten stage MOUDI, providing information about the size distributions and diel cycles of tracer compounds in the aerosols. Overall, the manuscript is well written and provides some useful information about the behaviors of some of important polar organic tracer compounds in the Amazon basin. I have mainly minor comments and suggestions.

Technical comments:

P10893, Line 17. The authors may want to add the following article by Hennigan et al. (2010).

Hennigan, C. J., A. P. Sullivan, J. L. Collett, and A. L. Robinson (2010), Levoglucosan stability in biomass burning particles exposed to hydroxyl radicals, *Geophys. Res. Lett.*, 37, L09806, doi:10.1029/2010GL043088.

Figure 4, 5 and 6: I found these figures a little difficult to compare in their current form. Perhaps, the authors can put all three figures together with day/night size distributions (see comment below) and adjust the Y axis to the same scale (i.e. Fig. 4b).

P10904, Line 12-16: Does the sulfate size distribution follow that of 2-methyltertols?

P10905, Lines 22 and 25: This seems to be contradicting. Have the authors day and night mass size distributions for Fig. 5 and 6? It is not easy to see day/night variations in Fig. 7.

Interactive comment on *Atmos. Chem. Phys. Discuss.*, 10, 10889, 2010.