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Interactive comment on "Urban influence on the concentration and composition of submicron particulate matter in central Amazonia" *by* Suzane S. de Sá et al.

Anonymous Referee #1

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The presented paper by de Sá et al, 'Urban influence on the concentration and composition of submicron particulate matter in central Amazonia' gives a very clear overview of the aerosol particle composition during the wet season in the Amazon region. The authors use two different methods to analyse AMS data. PMF, which gives an overview of the particle composition and fuzzy c-means algorithm to study the anthropogenic influence on the aerosol in Amazon.

I have few minor comments which are addressed in the following:

1. in the Introduction line 30, information on isoprene emissions compared to other biogenic or even anthropogenic VOCs could be added. Eg., how much isoprene is

estimated to be emitted globally, how much of it is emitted by the amazon rainforest?

2. Also in the Introduction„ in line with the measurement period that you are describing here, how many days of data did you collect during the IOP1. How frequently was the site influenced by the Manaus pollution during the time period presented in the manuscript?

3 in Methodology you mention 'V' and 'W' mode data. Maybe this is common knowledge but in my opinion it is useful to add a short description of what that means at least in the supplementary material.

4. in Auxiliary measurements and datasets, l. 124: it would be nice also for the supplementary measurements to add information for what time period that data was taken and how much of data was collected during each set of measurements.

5. in Results and discussion, in line 180 it is important to mention here again that the measurements at T0 sites were taken in a different year. It helps the reader.

Fig.3: This Figure contains too many data points, most of the points are hidden. I suggest to split the Figure into few sub-Figures, which enclose different time periods of the day. That allows to see any temporal trend of the particle evolution and to distinguish better what is happening at the different sites.

Fig.5: This Figure is easier to read and more informative, if the variables on the x-axis are grouped according to their source (biogenic, anthropogenic, background, biomass burning) other than the instrument they were measured with.

Fig. 7: the airmass back-trajectories are more valuable if they are calculated as ensembles rather than single trajectories. Ensemble gives you a group of trajectories which are all equally likely.

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2018-172, 2018.