

Interactive comment on “Molecular markers of biomass burning and primary biological aerosols in urban Beijing: Size distribution and seasonal variation” by Shaofeng Xu et al.

Anonymous Referee #2

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This paper identified and quantified the Molecular markers of biomass burning and primary biological aerosols. Atmospheric concentrations, seasonal variations and size distributions of anhydrosugars and sugar alcohols were investigated, the analysis and interpretation of the results are overall fair. The paper presents useful information about the organic aerosols. However, some additional information is still necessary for the readers to better understand this work. Comments: 1. Three anhydrosugars, six primary saccharides and four sugar alcohols should be introduced clear in the section 1, such as the sources, property. 2. In the section 2.1, a brief introduction to the surrounding environment of sampling sites should be provided, and the details about the sampling time should be described, including start time, end time, and duration. 3.

There are only four cases (less than 10 days) in each season, more field measurement estimation could decrease the influence produced by accidental elements, making the results more convincing. 4. Lots of ratios of individual anhydrosugars were showed in section 3.1.2, the result were almost consistent with previous results, the conclusion should be summarized and classified, so that the author can better understand. 5. The size distribution of Anhydrosugars, Primary saccharides and Sugar alcohols was analyzed in Secction 3.3, a size shift towards large particles and large GMDs in the fine fraction ($<2.1 \mu\text{m}$) was detected during the hazy days. The author ascribes them to higher humidity, but did not analyze the impact of RH on size distribution. Please give more discussion.

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