

Interactive comment on “Influence of biomass burning from Southeast Asia at a high-altitude mountain receptor site in China” by Jing Zheng et al.

Anonymous Referee #1

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This paper reports the chemical composition of submicron non-refractory aerosol at Mt. Yulong, a mountainous site at the southeast edge of the Tibetan Plateau in China, by using a high-resolution time-of-flight aerosol mass spectrometer, with other instruments such as aethalometer, SMPS, GC-MS/FID. The aerosol at Mt. Yulong was dominant by organic aerosol, following by sulfate, BC. The manuscript paid more attention to deconvolve the organic aerosol into three factors, i.e. biomass-burning organic aerosol (BBOA), BBOA, biomass-burning-influenced oxygenated organic aerosol (OOA-BB) and oxygenated organic aerosol (OOA). OOA-BB and OOA accounted for about 87% of organic aerosol, which suggests that the OA is highly oxygenated in this remote site. This study also points out that the southeastern edge of the Tibetan Plateau is affected

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by transport of anthropogenic aerosols from Southeast Asia. This work will add some understanding of the influence of biomass burning on remote site of Tibetan Plateau. The manuscript could be accepted for publication after revision.

There are some specific comments for authors: 1. The authors mentioned in abstract “. . . is affected by transport of anthropogenic aerosols from Southeast Asia.” In fact, according to the back-trajectory, the aerosols were from South Asia, not Southeast Asia. Please check. 2. In section “Measurements and data processing”, the authors should add more information about AMS size calibration, what the CE value were used, what the AMS data time resolution for data collection and later analysis were. 3. In Fig.S1, the mass concentration of PM1 measured by SMPS and that of AMS plus Aethalometer has compared. The authors mentioned the the estimated composition-dependent density was used. Please add what the value of aerosol density used? 4. Biomass burning event 2 is different with the others, the contribution of BBOA is comparable to the background period. It would be better to have more evidence to support the explanation. 5. Pearson Correlation Coefficient has mentioned many times in this manuscript, as we know, this value is related with the data points, please make them clear. 6. Line 80 Mt. Yulong (27.2oN, 100.2oE), 7. Line 113, the authors mentioned “particle number size distribution for particle mobility diameters ranging from 3 to 780 nm, In Table S1 just list 3081DMA and CPC 3775? Do you use two SMPS in parallel or not? 8. Line 304 “The carbonaceous species were very abundant in . . .”, Carbonaceous species should include BC. Please rewrite this sentence. 9. Line 567, the authors mentioned the axis for different species in the text, but not in the figure caption, please make the figure self-readable.

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