We are thankful to the reviewers for their thoughtful and constructive comments on our study. The manuscript has been revised accordingly. Listed below is our point-to-point response to each comment.

General comments:

The manuscript represents the results obtained by using a high-resolution time-of-flight aerosol mass spectrometer to monitor the chemical composition of submicron non-refractory aerosol at a high-altitude mountainous site at the edge of the Tibetan Plateau in China. The dominant component was found to be organic aerosol, with a contribution of 68%. Organic aerosol (OA) was found to be highly oxygenated and oxidized, depicting the secondary and processed nature of it. When deconvolving the organic aerosol to different factors, the two oxygenated factors, one originating from the processing of biomass burning and one highly oxidized, accounted for the 87% of the organic aerosol. The rest was identified as biomass burning organic aerosol (BBOA) originating from long-range transport both from neighboring countries (Myanmar) but also from nearby activities, exhibiting different degrees of processing according to its provenance. Concentrations of OA during the biomass burning influence were significantly higher than those during background conditions, denoting the important influence of long-range transport pollution at remote areas of the globe. Overall the manuscript is interesting and easy to follow. It focuses on an area of the globe that is not extensively studied, adding value to the reported results. Additionally, it demonstrates the importance of the influence from polluted areas to remote background sites situated away from local sources. Nevertheless there are some important details missing and more thorough discussion should be made in specific sections. Other than that the paper can be recommended for publication after addressing the issues listed below.

Specific comments:

Q1: It is listed in the measurements section (2.2) that a 7-wavelegth aethalometer was also collocated at the site. Based on the approach of Sandradewi et al. (2008) a source apportionment of the black carbon (BC) measurements could be effectuated for the distinction between a wood burning and a fossil fuel component. This could significantly increase the confidence in the identification of the biomass burning events and could possibly improve the correlations between the time series of OOA-BB and BBOA with BC. Since the measurements are there, it is a pity not to take advantage of all the information.

Reply: We thanks the reviewer for the comment. It would be nice to be able to separate the fossil fuel component from the wood burning component, however in our study, the approach of Sandradewi et al. (2008) could not be a valid method. The approach needs accurate parameterization of αTR for traffic and αWB for wood burning, which can only be obtained when measurements were done near the sources. In the case of our study, as the BC undergoes the transportation process, it gets coated, thus its AAE decreases (Chung et al., 2012). Most of the BC

measured at the site was from transportation, thus gives us big uncertainties on the αTR and αWB values. The measurement was taken at a high mountain site, with the nearest city located 20 km to the south, and more than 1000 m below its altitude. The air masses were mainly from the west or southwest of the site, covering mostly remote areas. Thus the traffic source should play a minor role in this study.

Q2: In the same section (2.2) it is stated that a Scanning Mobility Particle Sizer (SMPS) was used to measure the size distributions during the measurement campaign. How did the integrated mass from the SMPS compare to the added masses from the AMS and BC measurements?
Reply: We thank the reviewer for this question. We have done this comparison, and is shown in Figure S1 in the supplementary materials part of this manuscript.

Other minor comments:
L36: with their radiative forcing ..
Reply: Revised.

L65: convincing evidence ..
Reply: Revised.

L66: Most of the previous studies ..
Reply: Revised.

L84: making it an ideal site ..(delete "to be")
Reply: Revised.

L157: showed the highest probability ..
Reply: Revised.

L167: elemental composition was calculated ..
Reply: Revised.

L173: oxygenated fraction (instead of "oxygen")
Reply: Revised.

L207: It is stated that the OOA-BB of the study correlated well with aged BBOA from 3 hours downwind of a forest fire. Yet, in L214 it is noted that m/z 60 is reduced after long periods of atmospheric processing. This is somehow contradictory as 3 hours seems quite quick. Similar to the observations of the current study, Minguillón et al. (2015) identified a quite oxygenated factor

(named OOAm from mix) which was partially made up from processed BBOA quite quickly and that explained the fact that the time series of OOA tracked that of the BBOA. Therefore it is suggested to rephrase L214 as to reflect the quick nature of this processing.

Reply: We thank the reviewer for the suggestion. We have revised Line181 as follow.

"Compared with BBOA measured near sources, OOA-BB shows a higher oxygenated degree, with an O/C of 0.85, and a lower fraction of m/z 60 (0.6%), as a result of the oxidation of primary levoglucosan-type species (Jolleys et al., 2015). This oxidation process can be quick in elevation of the oxidation state, as also identified in another study by Minguillón et al. (2015)."

L254: Replace "It includes" maybe with "Among other"

Reply: We thank the reviewer for the suggestion. The sentence is revised as follow: "with the following criteria satisfied, i.e., (a) back…"

L257: from the south part ..

Reply: Revised.

L272: OA are represented by the left axis while other species are "represented" by the right axis.

Reply: Revised.

L275: were 10, 4 and 6-fold higher ..

Reply: Revised.

L278: remained low ..

Reply: Revised.

L282: Air mass or air masses (as mentioned before in the text)? Be consistent.

Reply: Revised.

L287: which could emit ..

Reply: Revised.

Reference

Chung, C. E., Kim, S. W., Lee, M., Yoon, S. C., and Lee, S.: Carbonaceous aerosol AAE inferred from in-situ aerosol measurements at the Gosan ABC super site, and the implications for brown carbon aerosol, Atmospheric Chemistry and Physics, 12, 6173-6184, 10.5194/acp-12-6173-2012, 2012.

Sandradewi, J., Prévôt, A. S. H., Szidat, S., Perron, N., Alfarra, M. R., Lanz, V. A., Weingartner, E., and Baltensperger, U.: Using Aerosol Light Absorption Measurements for the Quantitative Determination of Wood Burning and Traffic Emission Contributions to Particulate Matter, Environ. Sci. Technol., 42, 3316–3323, 2008.