Response to Referee #2

General Comments: This study reports on field measurements of trace gases, aerosols, and cloud water at a mountaintop site in Hong Kong. A valuable set of results are provided that are important for the research community interested in cloud processes, especially aqueous processing in clouds. The paper is written fairly well and the methods used seem sound. The conclusions are supported by the data. I did not find too much to comment on in terms of issues and it is my opinion that the paper was constructed well. I only have minor comments below that should be addressed prior to publication.

Response: We thank the reviewer for the helpful suggestions on our manuscript. We have made all of the suggested changes and clarifications. The reviewer's comments are in black and our responses are in blue, and the changes in the manuscript are in *italic*.

Specific Comments: Page 15, Line 23-26: This study showed how the oxalate:sulfate ratio grows in clouds and worth noting here for the discussion:

Wonaschuetz, A., et al. (2012). Aerosol and gas re-distribution by shallow cumulus clouds: an investigation using airborne measurements, J. Geophys. Res., 117, D17202, doi:10.1029/2012JD018089.

Response: Thanks for the suggestions. We have read this article carefully and cited it in the revision. In addition, the oxalic/sulfate ratio was checked and corrected, which increased from 0.04 to 0.09 as cloud processed and solar radiation intensified. The revised sentence is as follows.

'*The oxalate/sulfate ratio can be indicative of the in-cloud oxalate formation relative to sulfate. For example, aircraft observations (Sorooshian et al., 2007; Wonaschuetz et al., 2012) have shown an increasing aerosol oxalate/sulfate ratio throughout the mixed cloud layer from 0.01 for below-cloud aerosols to 0.09 for above-cloud aerosols, suggesting more aqueous production of aerosol oxalate relative to sulfate by chemical cloud processing.*'

Page 18, Line 19-21: This proposal is also supported by the following and can be added in the discussion to support the authors' speculation: Ervens, B., et al. (2018), Is there an aerosol signature of chemical cloud processing? Atmos. Chem. Phys., 18, 16099-16119, doi: 10.5194/acp-18-16099-2018.

Response: Thanks for the suggestions. We read through this paper and learned that the increased mass in larger (droplet-mode) particles could be a signature of chemical cloud processing due to in-cloud sulfate and aqSOA formation. So we cited this paper in the discussion and the texts as follows,

"*Model simulations have revealed that the relative mass increase of droplet-mode aerosols after cloud processing could be up to ~100% for marine air masses with significantly accumulated sulfate and oxalate at 0.56 μm range (Ervens et al., 2018). Hence we can expect that sulfate (air equivalent concentration of 4.9 μg* m^{-3}*) and the low-volatile fraction of DOM (15.0 μg* m^{-3}*) measured in cloud water are mostly retained in droplet-mode aerosols upon cloud evaporation, contributing to the droplet-mode mass fraction. Although the mass size distributions of particle compositions were not measured in this study, the abundant droplet-mode oxalate, organic carbon and sulfate aerosols reported in Hong Kong (Bian et al., 2014; Gao et al., 2016) seem to support our hypothesis.*"

Technical Comments: Page 11: "organics" is spelled wrong

Response: The typo is corrected.