The manuscript by Zhu et al. presented a general characterization of submicron aerosol composition, size distributions, and sources at two background sites (Lake Hongze site and Mount Wuzhi site) in China using high-resolution time-of–flight aerosol mass spectrometer. The results highlighted very different aerosol composition, diurnal variations, sources of organic aerosols, and elemental ratios at the two rural sites. Such two datasets are of interest and important for understanding aerosol chemistry at rural environments in China. I recommend a major revision before publication.

Comments:

1. It is difficult to compare the two studies directly since they were conducted in different years and different elevations. The authors should state clearly in the abstract that the two measurements were conducted in different years (2011 vs. 2015) and different elevations (21 m vs. 958 m) to avoid confusing the readers.
2. Calling “Lake Hongze” as a site in northern China is not accurate, in fact, “Central eastern China” might be better.
3. Abstract, the authors claimed “the most aged OA in real ambient air ever reported in the literature”, which is not correct. Please refer to Chen et al. (Geophys. Res. Lett., 42, 4182–4189, 10.1002/2015GL063693, 2015).
4. Page 2, line 14, rewrite this sentence.
5. Page 2, line 29, I didn’t quite understand why the regional background air pollution is a critical factor in determining urban air quality.
6. Page 3, line 1, “other instruments” actually refers to “AE31”, I didn’t see other collocated instruments.
7. All the names of submicron aerosol species should be synchronized. For example, “Cl^-“ vs Chl, “Organic in Figure 2” vs. “Organic aerosol”, etc.
8. Page 5, line 7, flow is not correct.
9. Page 8, line 10, could you give a number for the overestimation?
10. Page 8, line 11,”Figure 2c”should be Figure 2e?
11. Figure 3a, the vertical lines did not match the maximum sizes.
12. Why the authors use different names for OOA components at the two sites, for example, OOA1 and OOA2 at Lake Hongze and SV-OOA and LV-OOA at Wuzhishan?
13. Figures 3a, add figure legend for aerosol species.
14. Page 3, line 8 and line 10, same latitude and longitude for the two sites?