Dear Dr. Zhuang,

The revised manuscript has been reviewed again. As noted in the comments from the reviewer (attached), while the quality of the revised manuscript has improved, it is still not publishable in its current form.

Please revise the manuscript, incorporating the reviewer's comments, and resubmit for further consideration.

Sincerely,

Luisa Molina

2nd review of "The optical, physical properties and direct radiative forcing of urban columnar aerosols in Yangtze River Delta, China" by Zhuang et al.

The revised manuscript improves the quality to some extent. However it is still unnecessarily lengthy, it is not well presented, and there are many unjustified or weakly justified statements/conclusions; the language is poor and there are numerous grammatical errors. Further revision is required before it is considered for publication.

There are many places need to be revised for these issues, and in the following I just name a few as examples.

1. Abstract. The abstract should be a condensed version of the conclusion. When I go through the Abstract and the Conclusion, I find many inconsistencies in between. For example, with regarding the aerosol DRF, when the abstract focuses fine aerosol DRF, the conclusion focuses the total aerosol DRF; when the abstract deals with the coarse/fine fractions (15%, 51%), the abstract deals with coarse/total quantities (14%, 34%).

2. Ls 213-214: "The table also implies that west YRD could suffer very serious particle pollutions". I don't understand how this statement/conclusion can be made based solely on Table 1. Also, Ls 236-237, "the seasonal variations of its fine and coarse AEs are well agree with each other". This is not true for scattering aerosols and total aerosols.

3. Seasonal variation of aerosol optical properties. The authors claim that the aerosol optical properties have "substantial seasonal variations". This is not true for AOD. Based on Figure 1(a) and (b), there are not evident seasonal variations for total AOD and total SAOD. For AOD, one standing-out result as shown in Fig 1 is that the AOD in August is "unusually" high ("unusually" here means compared to the neighboring months, even throughout the entire year). This is an interesting result, and the authors should examine why.

4. L259, "SSA is the smallest in spring". This is not true either. Based on Fig 3, SSA is lowest in July and September, and if the August data point is not considered, SSA is lowest in the summer. Again, I strongly suggest the authors to examine the August data and results, which may have important influences on some results and conclusions of this study, and it could be an important finding too.

5. Ls 318-319 and Fig 5, "AOD observed by CE-318 are in "reasonable agreement with those from MODIS in seasonal variation and magnitude". I don't know what the "reasonable agreement" means here. In fact, if ignoring the highest AOD data point, the MODIS AOD is about twice of the CE-318 AOD. I guess the highest AOD value is the AOD in August, and if so, the August data plays a big role.

6. DRF in Table 3. Why the total DRF is not the sum of the contributions from the fine and coarse aerosols for all aerosol components (total, scattering, absorbing)? Explanations are needed.

7. Sect 3.1.4, many redundancies as in the Introduction.

8. Etc., etc.,…