A point to point response to the editor's comments

On behalf of my co-authors, we would like to express our great appreciation for your constructive comments and great effort on our manuscript entitled "Land use and anthropogenic heat modulate ozone by meteorology: A perspective from the Yangtze River Delta region" (acp-2021-619). We have studied the constructive comments carefully and have revised our manuscript. Replies to comments are in blue, corrections in the manuscript are in red. The line number in reply refers to the unmarked manuscript, in which all revisions have been accepted.

Comments to the author:

Dear Authors,

The reviewer agrees that the paper has largely improved and that, although the model results would benefit from updated land cover, the simulation can be accepted as it is. However, following the comments of the reviewer, I ask the author to extend the discussion/outlook mentioning that an update model coverage (GLC_2015) could improve the model results as shown by De Meij and Vinuesa (https://doi.org/10.1016/j.atmosres.2014.03.004) and Guang et al (https://doi.org/10.3390/su8070628).

Response: Thank you for the constructive comment and recommended literatures. In the revised manuscript, we add the content that uses an updated land cover dataset can improve the model results. More specifically, the underestimation of 2-m temperature (T_2) decreases when MODIS land use dataset and anthropogenic heat (AH) are taken into account. Please see lines 284-287. The simulation result of relative humidity (RH) is the worst with USGS land use dataset. Please see lines 294-295. The overestimation of 10-m wind speed (WS_{10}) is somewhat neutralized to fit the observations using MODIS instead of USGS land use dataset. Please see lines 301-303. The reasons for the model differences were discussed in the papers of De Meij and Vinuesa, and Guang, so their papers are cited in the revised manuscript. In addition, we extend an outlook mentioning that models can benefit from updated model coverage, like the GLC dataset. Please see lines 308-313.

Thanks and best regards

Wishing you a joyous Christmas and a prosperous New Year!

Thank you and best wishes.