

## General comments:

This manuscript used the weather station data and WRF-SLUCM simulations to analyze the links between UHA and CUHI and BUHI across the Suzhou-Wuxi-Changzhou metropolitan area in the YRD, China. The manuscript is well-structured and the logic is easy to read, and the results are interesting. Therefore, I recommend a Minor Revision before publish this manuscript.

## Specific comments:

1. Line 16: the authors showed the intensity reaches  $0.32^{\circ}\text{C}$  in Page 8, Line 200. While "...about  $0.3^{\circ}\text{C}$ " is acceptable for in abstract, please ensure consistency or use the more precise value to match the results in the abstract.
2. Line 38-41: "Early observations indicated that.....show significant heating up to 70 km downwind of the city". This is an interesting comparison. It would be helpful to briefly discuss the reasons. Is it caused by urbanization? Higher sensitivity of model simulation and satellite data? Or any other reasons?
3. Figure 2: the sensitivity experiment was conducted by replacing built-up areas with croplands. I suggest the authors mark the replaced areas in Figure 2c for better reading.
4. Section 2.2.3 Model configuration: the research area is a dense metropolitan area, anthropogenic heat flux (AHF) is a major contributor to the initial "heat plume." Can authors clarify in the model description whether a fixed AHF profile was used in the SLUCM or if it was dynamically scaled? This will provide important context for the results.
5. Figure 4: I suggest adding a vertical dashed line at sunset/sunrise hours in the subplots to help readers better understand the discussion in Line 193-207.
6. Discussion: Given that deep daytime convective boundary layers can reverse the UHA to a cooling effect, do you think your findings would change significantly if the study area included a mega-city with a much deeper PBL, such as Shanghai, in further downwind areas?