

Interactive comment on “Observations of the atmospheric boundary layer structure over Beijing urban area during air pollution episodes” by Linlin Wang et al.

Anonymous Referee #1

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This is an interesting study about the interactions between pollutant concentration, surface energy budget and PBL evolution over Beijing. I have only a few minor comments that need to be addressed. Detailed points: 1. Line 9. In which sense transportation is affected by air pollution? Usually is the opposite (transportation affects air pollution) 2. Line 186. U , and v are not used in equation (1) and (2). Only w is represented. 3. Line 187. The water vapor density is not in the equations either. Instead, there is L_v 4. Line 190. In which sense the SEB is one dimensional? 5. Line 200. Instead of neglecting the anthropogenic heat flux, I suggest to just analyze the sum of storage and anthropogenic heat flux. 6. Line 216. It is not clear what is the standard deviation between lidars. 7. Figures 8 and 9. The day 4th, during the daytime, the net radiation is

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negative (the surface is losing energy through radiation), the sensible heat flux is also negative (the air is hotter than the surface), and the storage term is positive (energy is stored in the surface). How can this be explained? Is there a hot advection to the site?

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