General comments

The authors have carefully considered all comments raised by referees and the manuscript has much improved. The only thing that I am not fully confident that the free convection assumption is applicable over majority of observations at CAMS site (there is probably a typo in the response letter where the range of conditions $-0.15 < (z-z_d)/L < 0$ is called very unstable; this corresponds to conditions from near-neutral to moderately unstable). However, the authors have quantified the uncertainty related to this assumption and I am ok with the response.

Overall I am positive for publication. There are still number of typos and unclear wordings in the manuscript. Below is a list of some (not certainly exhaustive). The manuscript would still require careful reading and correction, and removing some repetitions.

1. Line 67, replace "much high" with just "high"
2. L 77-78, do not repeat "and the boundary layer is taken as a box".
3. L. 108, better use "are not representative of wider area", L. 109, would it make sense "larger spatial representation" instead of accurate? Measurement accuracy is a different concept but here we talk mostly about spatial representativeness.
4. L. 112 "atmospheric surface layer similarity theory" (or Monin-Obukhov…)
5. L. 114 replace repetition "light propagation theory and…" with "the same principles"
6. L. 136: "PM2.5 dominated by wind" is loose wording. Perhaps "PM2.5 high concentration levels are caused…"
7. L. 138: What rising process? Probably you mean elevation of PM2.5 concentrations. The same in L. 144 (for the rising…)
8. L. 149 what are "vertical aerosols"? improve
9. L. 152 how near-ground cooling effect is caused by atmospheric circulation and vertical mixing? Perhaps you mean lack of vertical mixing?
10. L. 155 instead of "mostly" better "predominantly"?
11. L. 167, Instead of "argument" use "principles"
12. L. 198, it is not clear from text if the choice of coefficients was based on the experimental data of this study or some other. Also, better "based on minimal difference"?
13. L. 244, "relatively small variations in particle size": particle distributions are usually over very wide range of sizes; do you mean here small variations in size distributions?
14. Line 388, instead of "supplementation" use "gap-filling"
15. L. 389, verb is missing in the first part of sentence, add "exist"?
16. L. 390, more clear "impact of the deviation of the shape of spectrum from…"?
17. L. 406, this is not truly scatter diagram because bin-averaging has been performed. Call it relationship plot or similar.
18. L. 408: use "The fitted line"
19. L. 420: R_{MN}
20. L. 432: Better "Moderately strong" because the wind speed values were still fairly moderate
21. L. 433: better "has diurnal variation, which is related"
22. L. 488: I would skip the badly worded sentence. And in general 15% relative error is fairly small considering large uncertainties of aerosol fluxes in general.

23. L. 453: This is badly worded sentence. The Monin-Obukhov has a significant error… in terms of what? It is not the theory that has error but its applicability under these conditions. Revise this sentence.
24. I would suggest to move the whole paragraph (L. 451-462) into methods section (e.g. after line 281)
25. L. 483, explain what was the difference or remove “except that there is a slight difference”
26. L. 589: “from the ground”: maybe better “from near-ground emission sources” because pollution source below the observation level (including buildings) contribute to emissions.