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Interactive comment on "Multiple technical observations of the atmospheric boundary layer structure of a red warning haze episode in Beijing" *by* Yu Shi et al.

Yu Shi et al.

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Received and published: 15 April 2019

Dear reviewer,

Thank you very much for your comment on our paper, we think it is really very valuable and it helps us a lot.

In particular, as the first author, I am currently a Ph.D. student. I have really learned a lot of boundary layer knowledge from your comments. I would like to express my respect and heartfelt thanks to you!

Based on your review comments, we have added some calculations, redrawn some

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Discussion paper

of the figures, and responded to your comments one by one in the attachment, and adopted all your suggestions. Specifically:

1) Complement all recommended references. 2) Added MODIS satellite cloud image. 3) Corrected the representation of the height of the radiosonde detection boundary layer. As you said, the maximum temperature gradient method we obtained should be the residual layer top height. 4) Recalculating and drawing with high-resolution radiosonde, giving the wind profile of the low-level jet during heavy pollution. As you pointed out, we should use the jet height (or low-level wind extreme) as the boundary layer height. The value of the boundary height has also been corrected. The drawing is shown in Figure 6. 5) Increased the daily variation of the surface wind field in Beijing and the discussion of the removal of pollutants by cold air. 6) Respond to all major and minor comments you have given. 7) Carefully revised and edited the full text of the paper, and many details were rewritten.

Thank you very much !

Yours sincerely,

Yu Shi (first author)

Fei Hu (corresponding author)

Please also note the supplement to this comment:
https://www.atmos-meas-tech-discuss.net/amt-2018-391/amt-2018-391-AC4-
supplement.zip

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Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2018-391, 2019.