

Interactive comment on “Investigation of the mixing layer height derived from ceilometer measurements in the Kathmandu Valley and implications for local air quality” by Andrea Mues et al.

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The authors analyzed the seasonal changes of mixing layer height in the Kathmandu Valley, calculated the black carbon emission fluxes, and presented some interesting results. Since our team also conducted some ceilometer observations, I feel very interested in your study, and there are some tiny questions that I want to discuss with the authors:

a. As for the estimation of mixing layer with a ceilometer, some extreme weather conditions should not be ignored, such as the windy and sand storm days. Under these

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circumstances, the ceilometer retrivals may exist big errors [Tang et al., 2016]. Could the authors made some evaluations of the ceilometer measurements about this?

b. Since the black carbon is nonreactive, the black carbon column concentration in the mixing layer could represent the emission and transport contributions [Zhu et al., 2016]. If we ignore the transport effect, the diurnal variation in black carbon column concentration is consistent with the emission variations, thus can reveal the emission diurnal characteristics.

Tang, G., et al. (2016), Mixing layer height and its implications for air pollution over Beijing, China, *Atmospheric Chemistry and Physics*, 16(4), 2459-2475, doi:10.5194/acp-16-2459-2016.

Zhu, X., G. Tang, B. Hu, L. Wang, J. Xin, J. Zhang, Z. Liu, C. Münkel, and Y. Wang (2016), Regional pollution and its formation mechanism over North China Plain: A case study with ceilometer observations and model simulations, *Journal of Geophysical Research: Atmospheres*, 2016JD025730, doi:10.1002/2016JD025730.

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