

Interactive comment on “Assessment of inter-city transport of particulate matter in the Beijing-Tianjin-Hebei region” by Xing Chang et al.

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The manuscript is meaningful for the prevention and control of regional pollution in north China. It is absolutely worth of publishing as the study itself is extremely interesting. However, some improvements are suggested.

In the manuscript, the authors found the southwest-northeast transport pathway. Actually, it is the most important pathway in North China Plain, especially during the heavy polluted episodes. Tang et al. (2015) and Zhu et al. (2016) found aerosols transported from the southwest between 500-1200 m (in the upper boundary layer) using ceilometer observations, which were the same with your simulations. However, the transport just emerged during the initial periods of the heavy pollution episodes. With the in-

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crease of the aerosols, the PBL decreases (below 500m) and the transport effects weaken during the heavy polluted periods. Could you please quantify the transport in different pollution degrees? In addition, some precursors were also transported in the initial periods. Afterwards, the precursors will react and form particles. Could you please quantify the contributions of the particles and the precursors' transport?

What's more, without the passage of large- or medium-scale meteorological system, the local mountain-plain winds emerges in North China Plain (Tang et al., 2016, Fig. 10). The alternation between the mountainous (northeast) winds that begin at 03:00 LT at night and the plain (southwest) winds that begin at 12:00 LT in the afternoon occurs. Therefore, air pollutants will transport to the northeast direction in the afternoon and then transport back during latter of half of the night. Could you please clarify the transport circulations combined with the influences of the mountain-plain winds?

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