

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

Anonymous Referee #1

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This paper analyzed the flux flow between cities in BTH area, northern plain in China, with a commonly used transport model WRF-CMAQ. It is an important issue for policy makers to understand the regional transport of air pollution, and would be helpful in decision of emission control strategy. The paper is clearly written and easy to follow. I suggest its publication when the following issues are further stressed or discussed.

1. Language. There are some grammar errors in the manuscript and the language should be polished.
2. Lines 56-57, Page 3. It is not quite persuasive, since the non-linear relationship is considered in the DDM and RSM methods.
3. Lines 128-129, Page 6. The authors stated that the biases of simulated meteoro-

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logical field and PM_{2.5} concentrations fall in a reasonable range. For meteorological field, the statement could be supported by Table S1, with the evidence by Emery et al., 2001. For PM_{2.5} concentrations, however, we could not think it is "reasonable" as no further information is given. The bias could be quite large in some case, and some major components such as SOC were largely underestimated as indicated by the authors. Therefore, I suggest that the authors provide the evidence or criterion to justify the model performance., or describe the current simulation progress (model performance) in BTH region.

4. Section 3.2, Page 9. The authors described the difference in flux pattern between Jan and July. However, the reasons for the difference is not further discussed, and the seasonal mechanisms in pollution transport remained unclear. More information should be provided here.

5. Related with Q4, the paper described the pattern of pollution transport between cities, which is helpful for policy making. For scientific issue, however, the main factors influencing the transport were not sufficiently discussed. Could the author explain the roles of emissions and meteorological condition on the transport using the cases presented in the paper?

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