

Reponses to Anonymous Referee #2

General comments:

In this work, Wang et al. first analyzed the haze frequencies in seven heavily polluted cities in the northern China during 2001-2013. The most severe haze event occurred in January 2013 was identified and was further simulated by a carefully evaluated MM5-CMAQ chemical transport model with the updated MEIC inventory. The source contributions by region and by sector to the PM_{2.5} concentrations in three top polluted cities in the southern Hebei Province of China were presented for the first time, and the results are valuable to policy makers in controlling China's severe haze pollution. Generally, the method and simulation procedure are appropriate and clearly described. The manuscript is well organized and well written, although there are some grammatical errors in the manuscript. The reviewer would recommend the manuscript for publication in Atmospheric Chemistry and Physics after minor comments below are addressed.

Response:

We thank the reviewer for thoughtful and helpful comments. We've incorporated all comments. Please see below our point-to-point responses to the comments proposed by referee #2.

Technical Corrections:

Page 28397, line 15-16 and line 18-19. References are needed for these sentences.

Response:

We made suggested change.

Page 28397, line 19. Change "for" to "in".

Response:

We made suggested change.

Page 29398, line 12. Typo, “southeast” to “southeast”.

Response:

We made suggested change.

Page 29398, line 29. Typo, “southeast” to “southeast”.

Response:

We made suggested change.

Page 28399, line 1. Add “the” before “3rd”.

Response:

We made suggested change.

Page 28399, line 2. Add “the” before “5th”. Add reference “(NBS, 2012a)”. Change “top one” to “biggest”.

Response:

We made suggested change.

Page 28399, line 4. Add reference “(NBS, 2012a, b)”. Change the second “China” to “China’s”.

Response:

We made suggested change.

Page 28400, line 2. Change “exist” to “are”.

Response:

We made suggested change.

Page 28400, line 4. Change “its” to “their”.

Response:

We made suggested change.

Page 28403, line 29. Add a comma after “PM10”.

Response:

We made suggested change.

Page 28404, line 15. Change “they” to “and it”.

Response:

We made suggested change.

Page 28406, line 2. Add “are” after “and”.

Response:

We made suggested change.

Page 28407, line 11. Typo, “Feberury” to “February”. Change “Feberury 28” to “28 February”.

Response:

We made suggested change.

Page 28407, line 19. Typo, “Febuary” to “February”.

Response:

We made suggested change.

Page 28408, line 6. Add a comma after “Zhengzhou”.

Response:

We made suggested change.

Page 28408, line 21. Change “the average visibilities of the three 1 month episodes” to “the average monthly visibilities”.

Response:

We made suggested change.

Page 28409, line 8. Change “increased” to “increasing”.

Response:

We made suggested change.

Page 28413, line 7. Add a comma after “-7.4%”.

Response:

We made suggested change.

Page 28427, line 21. Remove “to”. Change “in” to “of”.

Response:

We made suggested change.

Page 28427, line 23. Remove “to”.

Response:

We made suggested change.

Caption of Table 5. Add a comma after “Xingtai”.

Response:

We made suggested change.