

Interactive comment on “Typical synoptic situations and their impacts on the wintertime air pollution in the Guanzhong basin, China” by N. Bei et al.

Anonymous Referee #2

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The manuscript presents a quite comprehensive analysis of the typical synoptic situations influencing the Guanzhong basin. The pollutant transport patterns, meteorological conditions, and observed PM levels in various synoptic situations were discussed in detail. It helps the scientists and policy makers to better understand the underlying reasons for heavy air pollution in this area and might also serve as a statistical basis for air quality forecasting work. Publication is recommended after a few revision comments are addressed.

Specific comments Page 8, Lines 11–15 Please consider briefly showing the analysis procedures in supplementary material.

Page 6, Lines 25–26 Page 8, Lines 19–23 It is stated that six selected days, represent-

ing six categorized typical synoptic simulations of the Guanzhong basin, were simulated by the numerical model. Please elaborate a bit about the selection process since the synoptic situations are not very clear cut at times, or even for different days which were grouped into the same category, the PM behavior could be quite different. Did the authors simulate a few cases for every category and then make the selection? Would the model give similar simulation results for most of the cases in the same category?

Figure 8 Seen from the figures, the model simulations tend to underestimate the PM concentrations when the concentration levels are high. What are the author's views on this? What are the major uncertainties of the model?

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