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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Regional severe particle pollution and its association with synoptic weather patterns in the Yangtze River Delta region, China" *by* Lei Shu et al.

Anonymous Referee #1

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Particle pollution has been raised wide attention in the world, and is quite prominent in China. Synoptic system is identified as one of the significant causes. This paper studied the relationship between particle pollution and weather pattern in the Yangtze River Delta region of China. The work is meaningful. The manuscript is well organized. I suggest to publish the manuscript after addressing the comments and suggestions as below: 1) In Figure 2 and 3, it is better to mark the city name near each point. 2) The study is discussed the regional air pollution, but the used pollution data are mainly based on the surface monitoring records in 16cities. 16 points cannot well reveal the spatial characteristics of air pollution. So, it is better to use the MODIS/AOD data and add some more discussion based on them. The satellite information can help to show

the regional condition. 3) The analysis of transport processes of particle pollution is limited to the geopotential height fields and wind fields at 850 hPa. It is better to give a more comprehensive comparison between different layers, for example, at surface layer, 850 hPa layer, and 500 hPa layer, etc. 4) There are many grammar errors in this manuscript, including Lines 99-100, "a great deal of" are not a good choice of words. May be replaced by "a lot of researches"? Line 110, "focuses the pollution" should be replaced by "focuses on the pollution". Line 271, "the most importance source" should be replaced by "the most important source". Line 383, "occur for 14.3% of the days" may be revised as "occur in 14.3% of the days". Line 389, "are less frequently" should be replaced by "are less frequent". Lines 398-399, "Fig. 6 to 10" should be replaced by "Figs. 6 to 10". Many other errors are not pointed out here. Please improve the English of the manuscript with the aid of native speaker.

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