

Interactive comment on “A new indicator on the impact of large-scale circulation on wintertime particulate matter pollution over China” by B. Jia et al.

Anonymous Referee #2

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This is a fairly focused study. I have a few questions and comments.

1. There is a typo in “indicator” in the title; I believe it should be “indicator”. 2. Page 19281, lines 18-21: Based on what was this point made? The two references, Lu et al. (2011) and Zhang et al. (2012), appear to be on SO₂, primary carbonaceous aerosols, and NO_x emissions, which didn't really provide direct evidence for changes (or lack thereof) in AOD. The time series of key meteorological parameters during the study period should be examined to exclude potential effects of their changes. For instance, there appeared to be some sort of trend in SHI in Fig. 6a. It'd be more rigorous to exclude such possibilities before zeroing on anthropogenic emissions with such absolute

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certainty. 3. Page 19282, lines 28-29: See the comment above. It'd be more rigorous to demonstrate no trend in SHI before looking into the correlation between SHI and de-trended AOD. 4. Page 19286, line 27: “diffusion” should be replaced with “ventilation” or terms of the likes. 5. Page 19287, lines 2-4: The first sentence is superfluous. 6. Page 19288, lines 19-20: A reference (or references) is needed for the statement that “SC has more cloud coverage than NC”.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 19275, 2015.