

Interactive comment on “Understanding Severe Winter Haze Pollution in the North-Central North China Plain in 2014” by Zhicong Yin et al.

Anonymous Referee #1

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The paper aimed at the severe haze events during the winter of 2014 happened in North-Central North China Plain, in which the authors attributed the main cause of haze in 2014 winter to the positive phases of the three teleconnection patterns: the East Atlantic/West Russia (EA/WR), the Western Pacific (WP), and the Eurasia (EU). The authors supplied some correlation analysis to explain the influences of three patterns to haze days over the North-Central North China Plain (WHDÑNCP), and they put the results of SVD to illustrate the causes of three patterns in 2014. The severe haze events in China has become a hotspot in the research of atmospheric environment, thus the issue of this paper is interesting, as documented by some other papers in recent years. This paper pointed out the three patterns of teleconnection exerted important effects to haze days in China in 2014, and there are some other papers raised similar view of atmospheric circulation, therefore, there is no enough novelty in this

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paper.

1, The WHDNCP shown in Fig. 4 includes significantly spatial changes in the research domain, and the domain is very small with respect to the spatial scales of three patterns. How can the authors explain the difference of WHDNCP in such a little region using so large three patterns?

2, Correlation coefficients have been supplied by in the paper to reveal the potential effects of three patterns to WHDNCP, but necessary physical analysis of such influence has been nearly ignored by the authors.

3, Concentration of PM_{2.5} reached its maximum in 2013, therefore the annual changes of emission should play an very important role in the haze days in recent years, but the author failed to arrange enough discussion and analysis about the emission change.

4, Line 20: EA/WA should be EA/WR

5, Line 36: What's the specific criterion of "static stability"?

6, Line 69-83: What's the role of Fig. 2 in such an analysis of large scale analysis for WHDNCP in 2014 ?

7, Line 109: two "that".

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