

Interactive comment on “Increasing persistent hazes in Beijing: potential impacts of weakening East Asian Winter Monsoons associated with northwestern Pacific SST trend since 1900” by Lin Pei et al.

Anonymous Referee #1

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This manuscript, titled “Increasing persistent hazes in Beijing: potential impacts of weakening East Asian Winter Monsoons associated with northwestern Pacific SST trend since 1900”, tried to talk about the haze pollution in China and associated impacts of climate anomalies.

General Comments: 1. This manuscript seemed like to summarize the previous studies and applied them in Beijing. The tiny difference was the “persistent hazes”.

For example:

C1

The relationship between haze and east Asia winter monsoon was revealed by Li Q et al (2015, DOI: 10.1002/joc.4350),

The atmospheric circulations related to severe haze was described by Chen and Wang (2015, doi:10.1002/2015JD023225.). Particularly and should be considered, the figure 3 was quite similar with Figure 7 in Chen and wang (2015).

2. The mechanisms about the impacts of SSTA on haze pollutions were not explained sufficiently.

The only discussion was “As discussed above, this notable warming phase in the subtropical Pacific could lead to a weakened EAWM, with increasing number of extreme southerly episodes, and hence increasing PHEs in Beijing.” The authors need to show some evidences and argue.

In a reference you cited, Yin et al. pointed out the negative SSTA in the subtropical western Pacific SSTA intensified the haze basing on observational and model analysis. It seemed like there was some contradictions. This enhanced the necessity to argue about the physical mechanisms.

3. “Increasing persistent hazes in Beijing: potential impacts of weakening East Asian Winter Monsoons associated with northwestern Pacific SST trend since 1900”

Since 1900?

4. The language was needed to be improved.

Specific Comments:

1. The calculation of haze data was possibly not preciseness and should be illustrated more detailed.

2. In Figure 3b, the shading was red over North China, indicating larger wind speed. Different from the discussion of the authors.

C2

“Consequently, North China is covered by the anomalous southerlies, resulting in a significant decrease in wind speed (Fig. 3b).”

3. In Figure 7, the vertical profile was not located in the right location, which was easy to be confused.

Please also note the supplement to this comment:

<https://www.atmos-chem-phys-discuss.net/acp-2017-757/acp-2017-757-RC1-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-757>, 2017.