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Atmos. Chem. Phys. Discuss., referee comment RC2
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Comment on acp-2021-826

Anonymous Referee #2

Referee comment on "Future projections of daily haze-conducive and clear weather conditions over the North China Plain using a perturbed parameter ensemble" by Shipra Jain et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2021-826-RC2, 2022

Review's comments for the paper: ACP-2021-826, entitled "Future projections of daily hazy and clear weather conditions over the North China Plain using a Perturbed Parameter Ensemble", submitted to ACP

Recommendation: Minor revision

General comments

By using a Perturbed Parameter Ensemble (PPE), this study examines past and future changes in both winter haze and clear weather conditions over the North China Plain (NCP). The main results show that the frequency of haze weather conditions is likely to increase whereas the frequency of clear weather conditions is likely to decrease in future. The study further elucidates the driving meteorological factors on the projected changes. The topic is an interesting one and results are well presented. The paper is in general well written and worth publishing. However, there are some specific comments listed below that need to be addressed to improve the quality of the paper. The paper, therefore, needs a minor revision before it is accepted for publishing.

Specific comments

1. Line 133. "in (Kong et al., 2021)". Rephrase it.

2. Line 135. "Chinese Meteorological Agency". Check and confirm this organization.

3. Lines 155-156. “(see next section for the cut-offs values used for PM2.5 concentration)”. The thresholds for haze and clear weather days are given in lines 153-154.

4. Lines 156-158. These statements could be made more clearly. Suggest adding the climatological zonal and meridional winds in panel a and b to illustrate the relationships between wind anomalies and the climatology.

5. Lines 181-182. It would be helpful for readers if authors can give a brief description of the meaning the HWI.

6. Labels in Figure 2 are too small to read.

7. Lines 268 and 269. Insert “weather” between “clear” and “conditions”.

8. Lines 311-314. Very long sentence. 9. Line 253. Figure 7. It is not very clear what is the x-axis for those PDFs.