Atmospheric Chemistry and Physics Discussions

Atmos. Chem. Phys. Discuss., referee comment RC1
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Comment on acp-2021-28

Anonymous Referee #2

Referee comment on "Separating emission and meteorological contributions to long-term $PM_{2.5}$ trends over eastern China during 2000–2018" by Qingyang Xiao et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2021-28-RC1, 2021

Although fine particulate matter in the air originates from emissions, its concentrations are also affected by meteorology. Quantifying the impacts of meteorological conditions on air quality is critical for both understanding pollution process and air pollution policy. In this article, authors used a two-stage prediction model to estimate PM2.5 over China based on various data, and assessed meteorological effects on PM2.5 using a generalized additive model and WRF/CMAQ model. I am impressed by the workload. The writing, organization, and contents of this manuscript are of significant quality. I recommend this manuscript be accepted for publication after the following minor concerns are cleared.

- In the introduction section, it is highly recommended that the authors provide more discussion on the related previous studies about meteorological contribution to PM2.5 based on modeling sensitivity studies and statistical methods.
- Please clarify how to adjust the meteorological effects using GAM and CMAQ in methods.
- Line 226, “benefical” should be “beneficial”
- Please modify the text above the color bar in Figure 7 with “GAM”ï¼□ “CMAQ”.