

Atmos. Chem. Phys. Discuss., referee comment RC1
<https://doi.org/10.5194/acp-2022-550-RC1>, 2022
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Comment on acp-2022-550

Anonymous Referee #1

Referee comment on "Climate-driven deterioration of future ozone pollution in Asia predicted by machine learning with multi-source data" by Huimin Li et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2022-550-RC1>, 2022

This manuscript investigated future climate change impacts on near-surface O₃ concentrations over Asia from 2020-2100 using a machine learning model along with multisource data. The random forest model was trained based on results from global atmospheric chemical transport model simulations, real-time O₃ observations, and other datasets. Future climate-driven changes in O₃ concentrations were predicted by the trained model together with 18 CMIP6 multi-model simulations under four future scenarios. The paper found that future climate change would aggravate O₃ pollution in Asia and expanded the pollution from North China to South China and extended it into the cold season in a warming future. Overall, this is a good example of machine learning and big data analysis in atmospheric science. The results are of good significance and novelty. The manuscript was well-written and properly organized. Therefore, I recommend the acceptance of the manuscript.

Please also note the supplement to this comment:

<https://acp.copernicus.org/preprints/acp-2022-550/acp-2022-550-RC1-supplement.pdf>