This study constructed 10 km daily surface concentrations of three major ambient pollutant gases, (NO2, SO2, and CO) across China from 2013 to 2020 based on the machine learning method. They also examined the variations in the pollutants in recent years. Other reviews have raised many good comments and suggestions. I still have some comments that can be addressed before publication.

My concern is the predictors that were used to train the model and predict pollutants' concentrations. The surface measurements from MEE are mainly over eastern China. Only NO2 from satellite products were used to supplement the surface data, and it also has large uncertainties for deriving surface information. For SO2 and CO, they applied model simulations to solve the lack of data in China. However, the model data also have large biases over the regions without observations. I understand the biases due to the lack of real-time data can not be easily solved. Some studies also used model results to train the machine model (e.g., Li et al., 2022). The authors should discuss the limitation in detail and provide the caveat of the results.
Response: Thanks for your suggestion and we have discussed the limitations, pointed the caveat of the results, and cited the reference in the revised conclusion as below:

"our estimated surface SO_2 and CO concentrations should have larger uncertainties than those of NO_2 since model simulations stead of satellite retrievals are supplemented during modelling to compensate for the lack of data in China. However, these data often have large biases in the remote regions with few observations in western China (Li et al., 2022), as the surface measurements from MEE are mainly over eastern China."

Specific comments:
For the meteorological data, winds at 850 hPa are commonly used to represent the transport of air pollutants and the pressure system in the mid-troposphere is also important for the pollution accumulation. The prediction could be more accurate if more meteorological parameters are included or at least discuss the potential bias without considering these factors.
Response: The meteorological system is complex, which can pose varying impacts on air pollutants, and we agree with you that considering more meteorological factors (e.g., winds at 850 hPa and pressure system in the mid-troposphere) may obtain more accurate estimates. Considering that we have included the variables related to winds and pressure near the ground, e.g., 10-m winds and surface pressure (1000 hPa), also the vertical distributions and variations of air pollutants in the boundary layer (i.e., boundary layer height), making such subtle adjustments will not greatly change the accuracy. Nevertheless, we have discussed this limitation and potential bias in the revised Conclusion according to your suggestion as follows:

"more parameters describing the complex meteorological system (e.g., winds at 850 hPa and the pressure system in the mid-troposphere) need to be considered in developing more powerful artificial intelligence models, which could be helpful in improving the accuracy of air pollutant retrievals."

Line 55: Many latest studies also modeled recent variation of air pollutants in China (e.g., Gao et al., 2022; Yang et al., 2022).
Response: We have summarized and cited these related studies in the revised Introduction.

References:
Li, H., Yang, Y., Wang, H., Wang, P., Yue, X., and Liao, H.: Projected Aerosol Changes Driven by Emissions and Climate Change Using a Machine Learning Method, Environ. Sci. Technol., 56, 7, 3884–3893, https://doi.org/10.1021/acs.est.1c04380, 2022.

Gao, J., Yang, Y., Wang, H., Wang, P., Li, H., Li, M., Ren, L., Yue, X., and Liao, H.: Fast climate responses to emission reductions in aerosol and ozone precursors in China during 2013–2017, Atmos. Chem. Phys., 22, 7131–7142, https://doi.org/10.5194/acp-22-7131-2022, 2022.

Yang, Y., Ren, L., Wu, M., Wang, H., Song, F., Leung, L. R., Hao, X., Li, J., Chen, L., Li, H., Zeng, L., Zhou, Y., Wang, P., Liao, H., Wang, J., and Zhou, Z.-Q.: Abrupt emissions reductions during COVID-19 contributed to record summer rainfall in China, Nat. Commun., 13, 959, https://doi.org/10.1038/s41467-022-28537-9, 2022.