

Atmos. Chem. Phys. Discuss., referee comment RC1  
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## Comment on acp-2021-1035

Anonymous Referee #1

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Referee comment on "Discrepancy in assimilated atmospheric CO over East Asia in 2015–2020 by assimilating satellite and surface CO measurements" by Zhaojun Tang et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2021-1035-RC1>, 2022

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The paper evaluates the effects of satellite and surface measurements on atmospheric carbon monoxide assimilation over East Asia. It is well-written and can provide valuable information for numerical studies on atmospheric carbon monoxide. I recommend the publication of the paper after the following issues have been addressed. The authors showed the underestimation of the modeling on surface carbon monoxide by comparing the a priori simulation with observations in the first two Figures. However, in the latter part of the paper, how much will the data assimilation with different types of carbon monoxide measurements improve the simulations is not evaluated. The authors can add some statistical metrics in the examinations, for example, the correlation coefficient and absolute bias.