



EGUsphere, referee comment RC1
<https://doi.org/10.5194/egusphere-2022-738-RC1>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on egusphere-2022-738

Anonymous Referee #1

Referee comment on "What caused ozone pollution during the 2022 Shanghai lockdown? Insights from ground and satellite observations" by Yue Tan and Tao Wang, EGU sphere, <https://doi.org/10.5194/egusphere-2022-738-RC1>, 2022

This study is well done and the paper clear and concise. However, the focus is rather local.

One recommendation is to put the findings of the paper into better context. For instance, the NO titration effect is well documented in the literature over the last 30+ years in the US and Europe and more recently in China. So, is it a surprise that you see this effect in Shanghai and other large Chinese cities? Not really as you indicate. Other large world cities have struggled with the issue of decreasing emissions enough to begin seeing reductions in ozone. It would be worth discussing the literature on this topic.

It would also be helpful to discuss better (a few paragraphs) on how HCHO/NO₂ and ozone trends have evolved over the satellite record. You only looked at TROPOMI, but the OMI data record is much longer (2005-present). How has the HCHO/NO₂ evolved over time in Shanghai and other Chinese cities? This analysis would help to put the magnitude of the 2022 LCD into historical context and help policy-makers to know what VOC and NO_x emissions reductions will be required to see ozone decrease. There are studies in the literature that have looked at the historical HCHO/NO₂ in China, so you may not need to do your own analysis.

These two recommendations will help you to more broadly discuss the implications of your work for other Chinese cities and to better put the importance of your work (e.g., Summary and Implications) into context. I'm recommending this since your local focus on Shanghai may not fit the aims of ACP: "The journal scope is focused on studies with important implications for our understanding of the state and behaviour of the atmosphere. Articles with a local focus must clearly explain how the results extend and compare with current knowledge."

Line 222: "wug" is not a word. "with"?