



EGUsphere, referee comment RC2
<https://doi.org/10.5194/egusphere-2022-738-RC2>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on egusphere-2022-738

Hongbo Fu (Referee)

Referee comment on "What caused ozone pollution during the 2022 Shanghai lockdown? Insights from ground and satellite observations" by Yue Tan and Tao Wang, EGUsphere, <https://doi.org/10.5194/egusphere-2022-738-RC2>, 2022

This study describes a study in 2022 Shanghai lockdown by investigating the spatiotemporal variations in surface MDA8 O₃ and NO₂ concentrations, TROPOMI-based HCHO and NO₂ concentrations, and the cause of high O₃ concentrations during the 2022 LCD from two aspects: meteorological conditions and O₃ formation regimes. It has great insight on O₃ concentration increased in 2022 LCD, having greatly detailed data and substantial content. I am glad that the author can report the recent ozone pollution situation to us in a short time and make an in-depth analysis. But there are some problems, which must be solved before it is considered for publication. Below I have reported the lines in the text that require further investigation and clarification.

- L25: the abbreviations of nitrogen should be NO_x rather than NO_x. Elsewhere the abbreviation is correct
- 2.1 section: There is a lack of description of contaminant monitoring instruments and their detection limits.
- L63: 3.3.1 title "Effects of meteorological conditions on O₃ concentrations in Shanghai", I suggest changing the "O₃ concentrations" to "O₃ pollution".
- L164: "A large body of literature has indicated that meteorological conditions can significantly affect O₃ concentrations ...". there are only two references in the back, which seems a little weak. Suggest adding more references.
- Fig.2: the inset figures show the monthly average concentrations, but the y-axis is missing units.
- L126: based on the coverage in Shanghai that 2020 LCD date from 23 Jan to 23 Mar, but in this paper is 23 Jan to 12 Feb. Hope you can reconfirm it.
- L209 (Fig.9): in this picture, your x-axis is HCHO/NO₂ ratio, and y-axis is MDA8 O₃ (ug/m³), but OMI HCHO/NO₂ and high-O₃ Probability (%) in your reference paper, respectively (Wang et al., 2021). Can you explain this difference? Weather the change of axis will affect O₃ formation regimes?

Please also note the supplement to this comment:

<https://egusphere.copernicus.org/preprints/2022/egusphere-2022-738/egusphere-2022-738-RC2-supplement.pdf>