

Atmos. Chem. Phys. Discuss., referee comment RC2
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Reply on RC1

Anonymous Referee #1

Referee comment on "A comparative study to reveal the influence of typhoons on the transport, production and accumulation of O₃ in the Pearl River Delta, China" by Kun Qu et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2020-1286-RC2>, 2021

This work is of heavy workload and detailed analysis. Effects of typhoon on the transport, production, accumulation of O₃ are presented. Long time series of observations make the conclusions convinced. A series of sensitivity experiments are conducted to help understand how the differing location of typhoon would influence O₃ pollution in the PRD. Specific comments are as follow:

1. As mentioned in line 127, the differing location of typhoon will have diverse effects on O₃ pollution. In term of relationship between typhoon location and O₃ pollution, in what condition will the transport dominate, and in what condition will the accumulation lead? Likewise, how typhoon location affects the promotion/reduction of O₃ production? It would be better to summarize the general rule if possible, and show it in the conclusions.
2. In line 305-306, authors declare that vertical transport plays less significant role in the typhoon-induced O₃ pollution in summer, however, as what has been shown in figure 9, vertical transport contributes significantly in O₃ production. It makes me confused. Please give the explanation.