

**Responses to Editor**

Thank you for revising the MS. The referees find that the revision is OK. However, I have a comment on the results presented with respect to the ozone change due to QBO.

You have stated that the difference is about 2-3 ppb. This is very small as compared to the tropospheric ozone values (i.e. 40-150 ppb). Similarly, the change in TCO is just 2-5 DU and most measurements even have their uncertainty larger than this value.

Therefore, is this signal of 2-3 ppb or 2-5 DU is significant? If yes, how? This should be discussed in the paper. It is important as most results presented in the paper is purely based the model simulations.

**Response:**

Thank you for the suggestion. The standard deviation of near-surface O<sub>3</sub> over central China simulated in this study is 1.6 ppb and TCO is 1.4 DU. The change in near-surface O<sub>3</sub> concentration exceeds 3 ppb over this region between QBOW and QBOE and the change in TCO is 2.5 DU, which are higher than the standard deviations. It suggests that the changes are significant. We have now added the description in the manuscript.

Note that, in the model simulation, with fixed precursor emissions, the O<sub>3</sub> variation is only affected by changes in meteorological fields, which may lead to a relatively small O<sub>3</sub> variation compared to the real-world values.