

Dear Editor and Reviewers,

Thank you for the comments to help improve the quality of the paper. We have revised the manuscript to address your comments. A detailed response to each comment is provided in this file with comments from referees in black, author's response in red, and author's changes in manuscript in blue.

**Report #3 by anonymous referee #3:**

Do you have any idea about why the model underestimate the O<sub>3</sub> maximum in October or in fall over PRD region?

Responses: Figure 2 shows that the model predicted 8h maximum O<sub>3</sub> concentrations agree well with observations in Guangzhou in March, May-September, and November-December. Model overpredicted 8h maximum O<sub>3</sub> in April, but underpredicted 8h maximum O<sub>3</sub> in October. The general agreement in most months indicates the O<sub>3</sub> chemistry is well represented in the model. The meteorology performance (Table 1) indicates no obvious difference for predicted meteorology bias between the two months of April and October and the other months. By eliminating the above two reasons, we think the O<sub>3</sub> performance in April and October was caused by emissions, although there is no direct evidence for the emissions bias in these two months compared to other months.

Changes in manuscript: No changes were made for this comment.