

**Review for: Measurement report: Vertical and temporal variability of near-surface ozone production rate and sensitivity in an urban area in Pearl River Delta (PRD) region, China.**

**Summary:**

This manuscript presents a detailed study of the vertical and temporal profile of ozone production, using both measurement data and chemical box modelling. Overall, the manuscript is well written with a good flow. However, there are some grammatical issues that should be addressed before publication. I really enjoyed reading this manuscript, and feel that it would be of great interest to the urban ozone community, therefore I recommend it for publication to ACP provided some important changes to the text have been made.

Of particular concern is the use of the phrase “statistically different/difference” throughout the text. When this phrase is used, I would expect it to be backed up by a statistical test(s). I don’t think any further analysis is required, but the authors should re-think how they describe their findings and avoid this phrase when there is no statistical evidence to back up their claims. I would also recommend another detailed read-through of the document to check for grammatical errors that occur periodically. Please see below for more detailed comments.

**Detailed comments:**

56 Replace “have” with “has”.

65 Check grammar.

71 Check grammar.

75 Please explain why using only one height of measurements is of great limitation. Why is it important that this is done at multiple altitudes, when O<sub>3</sub> exposure occurs at ground level?

81 Check grammar.

85 This sentence is very long – check grammar and split into two after “VOC and NO<sub>x</sub> measurements”.

113 Misspelled “Asia”.

116 Check grammar.

224 Please state in the text that a full list all 47 NMHCs s available in the supplementary (Table S2).

- 230 Please include in this section the dilution / ventilation approach you have included in the model.
- 333 I advise that you should avoid using the word “statistically”, unless you have performed a statistical test. Please rephrase.
- 346 Again, if you use the phrase “statistically different”, I would expect to see evidence of a statistical test showing this.
- 351 I would rephrase this. Are you saying that event and non-event OFP and P(O<sub>3</sub>)net are not statistically different because they are within one standard deviation?
- 352 It is not clear to me how you have come to this conclusion (These findings indicate that...). Please clarify in the text.
- 358 It is well known that O<sub>3</sub> pollution episodes are jointly affected by photochemical reactions and physical transport processes. It's unclear to be how what you have said previously has led you to this statement.
- 438 Remove word “besides” – not needed.
- 476 Instead of saying “the results show”, be specific about which part of the figure you are referring to in the text. What is it in the figure that has led you to this conclusion?
- 478 How do you know this is attributed to physical transport? Is this just a suggestion based on knowledge of the atmosphere (please supply a reference), or is there something in the figure that provides evidence that increasing O<sub>3</sub> is due to vertical transport, and not early morning photochemistry? If it's because you have not measured any P(O<sub>3</sub>)net at this time, please state this in the text.
- 483 Change “residue” to “residual”.
- 644 “statistically difference” – see comments for lines 333 and 346
- 659 In the text, please direct the reader to Table S2 which defines which VOCs are in each category (NMHC, AVOC, BVOC and OVOC).
- 698 Check grammar in this section.
- 816 Remove “proper” – not needed.