

## ***Interactive comment on “Low-level isoprene observed during summertime at a forested mountaintop site in southern China: implications for strong regional atmospheric oxidative capacity” by Daocheng Gong et al.***

**Anonymous Referee #3**

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Gong et al. presents their results of online observations of isoprene and its first-stage oxidation products MVK and MACR in summer 2016 at a remote, high-altitude mountain forest site to the north of the air-polluted PRD region in southern China. They found that the isoprene level was significantly lower and attributed it to the strong regional atmospheric oxidative capacity. The PBM-MCM model was used to estimate the OH and NO<sub>3</sub> concentrations to support their assumptions. The paper is well written and organized. The reviewer would recommend the manuscript for publication after some specific comments. Specific Comments: 1. O<sub>3</sub>, OH<sub>x</sub>, PAN, and NO<sub>3</sub> are indi-

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cators of atmospheric oxidative capacity. Since OH and NO<sub>3</sub> were not determined in the observation, the observed O<sub>3</sub> concentration is a more powerful tool to express the atmospheric oxidative capacity. The diurnal variations of O<sub>3</sub> peaked at 20:00 is very interesting, because the changing trends of O<sub>3</sub> and sun radiation were not accordant. The temporal variations of O<sub>3</sub> also show different trends during the observation. Could regional transport contribute O<sub>3</sub> to the measurement site? The authors had better add more discussion on the variations of O<sub>3</sub> concentration. 2. The modelled OH and NO<sub>3</sub> concentrations were regarded as the most important evidence for the conclusion of this manuscript. However, the PBM-MCM model is not a good tool to estimate OH concentrations at low NO<sub>x</sub> concentrations at remote site like this study. The reviewer strongly recommend the authors add some other models to support their conclusions. 3. Page 1, Line 22-23, this sentence is incomplete. 4. Page 4, Line 32, the specifications of the Teflon filter should be clarified. 5. Page 5, Line 21-23, it is confused that “daily” and “every two days”. Secondly, it seems that SO<sub>2</sub>, NO<sub>x</sub>, and CO analyzers are usually calibrated with domestic standard gases which are not NIST-traceable. The NIST-traceable standard was only applied to calibrate O<sub>3</sub> analyzer.

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