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

Received and published: 9 August 2018

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 NO3 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. O3, OHx, PAN, and NO3 are indi-
cators of atmospheric oxidative capacity. Since OH and NO3 were not determined in the observation, the observed O3 concentration is a more powerful tool to express the atmospheric oxidative capacity. The diurnal variations of O3 peaked at 20:00 is very interesting, because the changing trends of O3 and sun radiation were not accordant. The temporal variations of O3 also show different trends during the observation. Could regional transport contribute O3 to the measurement site? The authors had better add more discussion on the variations of O3 concentration. 2. The modelled OH and NO3 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 NOx 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 SO2, NOx, and CO analyzers are usually calibrated with domestic standard gases which are not NIST-traceable. The NIST-traceable standard was only applied to calibrate O3 analyzer.