

Interactive comment on “Urban-rural interactions in a South Korean forest: uncertainties in isoprene-OH interactions limit understanding of ozone and secondary organic aerosols production” by S. Kim et al.

Anonymous Referee #2

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General comments: The manuscript “Urban-rural interactions in a South Korean forest: uncertainties in isoprene-OH interactions limit understanding of ozone and secondary organic aerosols production” by Kim et al present a isoprene-OH study in forest area. This work was designed to investigate the urban-rural interactions by constraining key atmospheric chemical processes. I think that this research had contribution to better understand isoprene chemistry, and the methodology was encouraging. However, the way of presenting the scientific findings is not explicit and often confusing, and the current version needs more technical details.

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Specific comments: 1 The title is too long, needs modification to highlight the aim of the work, I suggest the authors to remove ozone and SOA out ; 2 The abstract and the whole text have a lot of well-known knowledge, the authors needs to do some housekeeping, and focus on the findings from this work, e.g., figure 1 and related text could be deleted; 3 The section of method is weak. The authors published a paper on the measurements already, however as a follow-up work, one needs to know the area of the forest, statistics of the vegetation, meteorological parameters with the consideration of urban areas. 4 The measurements techniques needs to add data of QA/QC, especially for VOCs speciation and HONO when different technologies were used for the same pollutants; 5 The whole measurements were done only for 6 days? Will this be representative for urban-rural interaction? 6 Figure 2 looks strange to me, the peak around 17:00-20:00 comes out as a surprise, and I did not find reasonable explanation for this pattern. 7 The title for section 3.2 is much too long, with a lot of ideas mixed up. I strongly suggest to break it down to several parts, to present the constrains on isoprene, intermediates, HONO, and radicals separately. 8 I do not understand the logic of the 7 scenarios in table 1 and the explanation in text.

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