Response to Review 1

Thank you very much for your constructive comments. The point-by-point responses to your comments are given below. Your comments were all considered, and the manuscript was revised accordingly. In the revised manuscript, all changes are marked in blue.

1. In the INTRODUCTION section: Generally, the introduction section was poorly organized, and it should be rewritten. In this section, many literatures on the HONO field study were not cited, and the available studies were also not displayed in a line. Especially, the description about tools and methods should be positioned later on the HONO formation mechanism concluded from the field studies during the past years. In a word, this section should be written in more detail.

   A. The introduction has been thoroughly revised with adequate references being added. In addition, the detailed description about methodology was moved into measurement parts and supplementary information (new).

2. "In this study, we conducted a measurement. . . for two purposed:. . .1 to figure out . . .2 to enhance . . .", However, one can see that which did not coincide with the ABSTRACT structure. Why?

   A. In this study, we measured HONO, run photochemical and ANN model, and demonstrated its role in O_3 production by providing OH radicals in the early morning and its formation through heterogeneous conversion of NO_2. These are the main findings of this study and stated in abstract and conclusion, which were also modified in the revised manuscript.

3. In the experimental section, ANN should also be mentioned in the INTRDUCTION sections, as well as the relevant literatures on HONO.

   A. The detailed description about ANN was moved to supplementary information in the revised manuscript. There, the theoretical backgrounds are explained with relevant literature.

4. In the discussion section, Generally, the discussion about the field data is weak (the measurement period is so short) and it is difficult to support the conclusion.

   A. Please see section 3.1. It was revised with more details about measurement results. Table 2 and Figure 5 were added and Figure 2, 4, and 6 were modified. In addition, supplementary plots are provided in supplementary information (S3).

5. The English presentation is not so good, which could not be fulfil of the standard of the ACP manuscript. It should be improved greatly before publication. There are many spelling mistakes and syntac tic error, as well as unsuitable sentence used. For example, in line 34. ". . .higher in high-O3 episodes (1.82 ppbv) than non-episode (1.20 ppbv)"

should be changed to ". . .higher in high-O3 episodes (1.82 ppbv) than that in the non-episode (1.20 ppbv).

A. All errors were corrected and the revised manuscript was English proofread as well.