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## ***Interactive comment on “Sensitivities of NO<sub>x</sub> transformation and the effects on surface ozone and nitrate” by H. Lei and J. X. L. Wang***

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First of all, thanks for the suggestion on revision. Your comments are very good. However, we may not revise it in that way. The way that you suggested can make the manuscript a good paper to publish. While, it downgrade the value of this study.

We all talked about NO<sub>x</sub> transformation. "People think that we understand the transformation of NO<sub>x</sub>, but in fact we don't". I discussed this paper with a senior scientist from UCAR specialized in NO<sub>x</sub> chemistry two days ago. The discussion deeply convince me the value of this study. CAM-Chem results in this paper totally agree with his box model results. I will deeply revise it and may discuss it with more scientists specialized in NO<sub>x</sub> chemistry.

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Our position in this study emphasize following aspects: (1) It is a sensitivity study. The model result relay on the chemistry mechanism. Biases caused by all other factors may not affect the sensitivity.

(2) We are not interpreting the analysis based on measurements. We directly study the sensitivity of NO<sub>x</sub> transformation in practical atmosphere.

In this revision, we will enhance the analysis on model results. More information about sensitivity of NO<sub>x</sub> transformation will be brought out. I believe that a more comprehensive manuscript on this issue will made.

Anyway, thank you very much for your good suggestion, careful reading and thinking on this manuscript. Especially, thanks for your wish to help.

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