

Interactive comment on “Parameterized reactivity of hydroxy radical, ozone, nitrate radical and atmospheric oxidation capacity during summer at a suburban site between Beijing and Tianjin” by Yuan Yang et al.

Anonymous Referee #2

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Oxidation capacity is an important parameter to understand the atmospheric chemistry of air pollutants. This work analyzed the ROH, RO₃ and RNO₃ based on the measured VOCs and traditional trace gases concentrations in Xiang He. Overall, the methods are reasonable and the data are robust. After the following questions have been well addressed, it is publishable.

1. Isoprene is also an alkene. I understand the authors want to differentiate the anthropogenic VOCs from the biogenic VOCs. I suggest to define them more strictly and accurately. 2. In equations 1-3, the “k” should be lower case letters for rate constant.

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3. When calculating the reactivity, did you consider the influence of temperature on the rate constants? How about the uncertainties for the calculation? Can you give a comment on the possible difference for the measured R and estimated R? 4. Although the authors compared the calculated R values with different places. It is difficult to follow it in the text. I suggest to list them in a supplement table. 5. Traffic is not the only source of NO_x. Thus, it is not reasonable to ascribe the ROH to traffic Line 385. 6. When comparing the ROH(TVOCs) with other researches, the comparison of VOCs composition is necessary among different researchers (lines 399-419). 7. When discussing the implication for control strategies, I think it is more reasonable to normalize the reactivity to secondary pollutants formation potential.

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