

Interactive comment on “Heterogeneous conversion of NO₂ and NO on HNO₃ treated soot surfaces” by J. Kleffmann and P. Wiesen

Anonymous Referee #3

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I found the introduction very readable and interesting. The experimental results are also interesting, and controversies with previous measurements were pointed out. There are some specific items I think the authors should address and I have some suggestions for clarifications of their points. There are still some awkward wordings in the english the authors have chosen.

p. 6752. ' made of pure PFA ' For clarification, as this reader is not certain of the meaning: replace ' caused by the ' and following with: ' because of potential strong adsorption of HNO₃ that can interfere with the experiments. ' It would be good to give an approximate final concentration of the mixture. The approximate vapor pressure of HNO₃ can then be estimated from thermodynamic models. p. 6754. Again for clarity:

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change sentence: ' Only, for HNO₃ ' to: ' Only for HNO₃ mixing ratios > 800 ppbv were NO and NO₂ formed. ' '..initially only taken up ..' -> 'initially taken up by the upper surface of the soot and diffuses into the pores of the soot later. ' 'recover' -> 'recovery'. p. 6755. The discussion of the Salgado Munoz results should still be improved. An additional reason for the discrepancy: The experiments here utilized fairly specific detection of HONO and HONO₃ versus that for NO₂ and NO. Mass spectrometric detection using electron impact to detect these species can be complicated: NO appears at 30 amu and NO₂ appears at 46 and 30 amu while HNO₃ can appear at 63 amu but usually fragments to 46 amu and 30 amu. Accurate separation of all these species would not be straightforward using electron impact.

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 6747, 2004.

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