

Interactive
Comment

Interactive comment on “Transpacific transport of ozone pollution and the effect of recent Asian emission increases on air quality in North America: an integrated analysis using satellite, aircraft, ozone sonde, and surface observations” by et al.

Anonymous Referee #3

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This paper examines transpacific transport of ozone by combining aircraft, satellite, and modeling in a very convincing way. It was a pleasure to read. I recommend publication with a few minor modifications.

1. page 8150, line 17. The TES profiles are filtered out for poor sensitivity using the diagonal term of the averaging kernel below a certain threshold. One of the papers cited by the authors (Luo et al. 2007) discusses using the degree of freedom (DOF)

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Interactive Discussion

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to examine the influence of the a priori. What is the difference between the two approaches?

2. page 8155. What are the implications of the model ~30% overestimate of OH for the paper? The authors only discuss the impact on CO, as it is most obvious in the comparison to aircraft and ground-based observations. Such a large overestimate would likely impact the top-down estimate of NO_x emissions (underestimate of NO_x lifetime and thus the inferred NO_x emissions could be overestimated). How would the paper conclusions regarding Asian impact on ozone over North America be affected? A brief discussion addressing these issues would be useful to the reader.

3. page 8156, section 4 lines 17-20. It would be useful to include the percentage increase in PAN for the 2000-2006 rise in Asian anthropogenic emissions. This would allow a comparison to the observed 22% increase in PAN cited in the paper.

4. section 7.1. PAN was also measured at MBO during INTEX-B (Wolfe et al., 2007). How do the model calculations compare to observations at the site?

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 8143, 2008.

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