

## ***Interactive comment on “Horizontal variability of aerosol optical depth observed during the ARCTAS airborne experiment” by Y. Shinozuka and J. Redemann***

**Anonymous Referee #3**

Received and published: 14 July 2011

I agreed with two previous reviewers that this is a good paper. The paper is well written, and the method and results are described in detail. I recommend its publication in ACP after my following comments are addressed:

- p. 16248, line 16: how will the wind speeds affect the relative standard deviation of AOD? Are these the typical wind speeds in the atmosphere? Also, how about the other meteorological conditions in these two phases (say, the atmosphere stability) and how these may contribute to the difference in the relative standard deviation of AOD?
- p. 16249, lines 1-5: can you briefly describe what is flight leg and what is flight segment?

C6393

- p. 16253, line 13: why are the distances for consecutive pairs different for calculating the standard deviation (0.7 km) and the autocorrelation (0.4 km)?
- p. 16254, line 14-18: What is the implication of this result? Does it mean that even for low AOD in the Canada case, it is still influenced by local emissions? What is the explanation for this?

Table 1: ‘%’ is missed for the relative standard deviation of Angstrom exponent.

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Interactive comment on Atmos. Chem. Phys. Discuss., 11, 16245, 2011.

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