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Comment

Interactive comment on “A case study of aerosol depletion in a biomass burning plume over Eastern Canada during the 2011 BORTAS field experiment” by J. E. Franklin et al.

Anonymous Referee #2

Received and published: 20 April 2014

This paper showcases the potential of using different platforms and datasets in order to gain more insights to the evolution and chemistry of biomass burning plumes. It is well written and well presented. I recommend its publication to ACP after the comments of referee 1 have been addressed and a few minor issues that I would like to bring up below are remedied.

Specific comments:

1. I would really like to see more evidence of the "scavenging" that the authors claim. I think an additional figure showing this, augmented by a few sentences of explanations

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would improve the manuscript.

2. Page 3401, chapter 3.1.1: Please explain what is meant by "dynamically aligned"
3. Page 3404: second to last paragraph: Please briefly mention the altitude ranges of the radiosondes used.
4. Page 3409, chapter 4.3. It is not immediately clear why the backward trajectories were initialized at different times.
5. Page 3410, second to last and last paragraphs: The authors claim: "However, there is a general agreement between the models that the airmass west of 25 The Pas, Manitoba (53.8 N, 101.2 W) underwent \sim 18 h of moderate to strong vertical ascent associated with a significant convective weather event." It is not clear to me as to where or how this was shown in the paper.

Minor comment: 6. Page 3397, sentence 1: change "25 yr" to 25 years.

Interactive comment on *Atmos. Chem. Phys. Discuss.*, 14, 3395, 2014.

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