

Interactive comment on “Regional differences in organic composition of submicron and single particles during INTEX-B 2006” by D. A. Day et al.

Anonymous Referee #1

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This paper describes regional differences in organic composition of submicron and single particles during INTEX-B 2006. The authors have described in details the sampling locations, sampling methodology, analytical techniques and QA/QC procedures. The work will be helpful in adding information to the existing knowledge base regarding sources and processes responsible for OM in different regions of USA. Therefore, this paper should be considered for publication after some revisions and addressing the comments described below. However, the authors have not tried to find any variation of the sources due to seasonal difference of wind pattern/directions (if any). Please add a paragraph elaborating this possibility.

Specific Comments

Abstract Line 21: “losses of organic aerosol” – Provide reference for this. This is not
C559

discussed anywhere in the text.

Introduction line 30-31 (page 6660): “Northeastern pacific free troposphere” – Is this “Pacific” air mass as mentioned in abstract; “Western North American free troposphere” – Is the “Continental” air mass as mentioned in abstract?

Experimental Methods (page 6660): Is there any effects of season? Please provide a paragraph on it.

Experimental Methods line 15 (page 6660): “Fights” should be “flights”.

Experimental Methods line 16 (page 6660): Please provide another figure on flight tracks and not a “link”

Flight tracks from above link – Flight numbers on this link and on Figure 2 don't match

Experimental Methods line 3 (page 6661): “typically these “short”...of a level flight leg – Please clarify and language is not clear

Experimental Methods line 6 (page 6662): “We estimate that they could have accounted...10% of OM – Any supporting reference?

Experimental Methods line 10 (page 6662): “Several samples were NOT excluded...>2 detection limit criteria – Please clarify, sentence not making much sense”.

Experimental Methods line 5 (page 6663): “Approximately half of the filters...by the presence of detectable organics” – Please clarify as sentence not making much sense.

Experimental Methods line 7 (page 6663): “Of these samples, 40...above the detection limit” – What is the conclusion from the sentence.

Experimental Methods line 25 (page 6664): “Seattle included most of flight 3” - Does the flight number matters unless you provide a list of flights, their order in air masses etc?

Experimental Methods line 2 (page 6664): “Similarly, we included. . .during the Seattle flight” – What is the logic behind this part?

Results line 10 (page 6666) – “Upper and lower bounds. . .” – In section 3.1 mention the upper and lower bounds. . .

Results line 9 (page 6667) – “Figure 4 shows that. . .~1000 m” – There is a error on this figure, either it is a color mismatch problem or the statement is wrong. Pacific showed maximum range of O/C rations and continental the least.

Results line 7 (page 6668) – Pacific air mass samples favored – Change to “fall”

Results line 4 (Page 6669) – Why is pollution generated in Asia not affecting Central Valley?

Results line 27 (Page 6669) – Space missing between “that MCKendry”

Results line 9 (Page 6670) – MBL – What does it mean?

Results line 4 (page 6671)- Why no particles from Central valley?

Results line 25 (page6672) – High frequency – Clarify “high frequency” – Is it absorbance or occurrence?

Discussion line 8 (page 6673) – There are no published. . .Northeast . . .air masses: Is it northeast or northwest?

Discussion line 4 (page 6675) – Noy – Is it total reactive nitrogen?

Discussion line 4 (page 6675) – It should be mentioned in the experimental methods if there is simultaneous gaseous sampling.

Conclusions Acknowledgements part (page 6677) – “In addition we bn are grateful. . .” – Delete bn

Figure 3 (Caption last line) - Explain more about upper and lower bound in the text of the journal

C561

Figure 4 (Caption) – Mention “K” type panel

Figure 4 – Particle diameter missing for panel (e)

Figure 6 – How about a plot like these for every air mass? In other words, 4 different plots based on air masses.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 6657, 2009.

C562