

Comments by Reviewer #4:

(Page/Line numbers refer to the previous version of the paper; they are simply copied from the reviewer report)

Page 11-12:

I think the reviewer may have referred to studies by Parrish et al., such as Parrish, J. Geophys. Res. 2002 (10.1029/2001JD000720), or Atmos. Environ. 40 (2006) 2288–2300

Page 11, line 4-5 and following:

I think your response was great and includes important information; however, I did not find if/where you added it to the revised manuscript.

Figure 9:

“...If you meant the OM/OC ratios, those ratios for HOA are zero (Table 1)”

I got confused about your response here. 1) I don't see any OM/OC ratios in Table 1,

2) How can an OM/OC ratio be 0 (i.e. $OM = 0$)? Do you mean for very low oxidized material $OM/OC \sim 1$?

Editor comments

Here the line numbers refer to your revised manuscript.

Comments:

l. 220: Can you give numbers for the LDL values? Has LDL been defined before?

l. 265/6: I do not understand the argument ‘Because the processes are physical we expect that the order of NO_y lifetime in our study is similar.’

l. 330: Can you add a reference to the statement that humic-like substances have high OM/OC ratios?

l. 383: Not clear. R4 as it is written does not include any pH dependence. Why does the fact that sulfate was neutralized by ammonia makes R4 negligible?

l. 572: Add the value and reference for the rate from the New England Air Quality Study here

l. 530: Not clear what you mean

“As two members, HOA and LV-OOA, had similar f₄₄ values, the indicator **did** not work” or

“**If** two members, HOA and LV-OOA, had similar f₄₄ values, the indicator **would** not work”

Technical comments

l. 93: sometimes

l. 128; 130 min: under 1 min averaging time → with 1 min averaging time

l. 144: 2,5 → 2.5

l. 152: 'standard deviation' can be omitted as SD has been defined before

l. 258: originate → originates

l. 268: in the similar order to → on the similar order of

l. 279: "Nevertheless of such..." – do you mean "Despite of...?"

l. 282: sinking → sink

l. 327: at some extent → to some extent

l. 382: remind → remember

l. 393: 4 times as fast as → four times faster than

l. 424: Robert → Roberts

l. 437: under → at

l. 507: another → other

l. 524: 'The greater extent of reaction processing proceeds..' – please reword

l. 573: implying → imply

l. 575: increasing → increase

Figure 7, l. 860: as function → as a function