

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 ~ 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

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