

Interactive comment on “Variability of organic and elemental carbon, water soluble organic carbon, and isotopes in Hong Kong” by K. F. Ho et al.

K. F. Ho et al.

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We thank the reviewer for his or her comments. The reviewer made several very useful suggestions regarding our monitoring and analysis that we will be incorporating into our ongoing studies.

To respond to the reviewer’s specific comments: 1. Recent $d_{13}C$ studies should be mentioned in chapter 2.4 and compared to results of this work in chapter 4.3.

The references suggested by the reviewers were mentioned in the manuscript and the manuscript was revised.

a) Huang et al., Atmospheric Environment 40 (2006) 2690-2705, report insignificant

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differences for $\delta^{13}\text{C}$ in OC between a tunnel and a forest site.

The reference was cited and their results in the discussion of carbon isotope in 4.3 Stable carbon isotopic composition of OC and EC. Huang's study showed there have obvious difference of $\delta^{13}\text{C}$ between biogenic and motor vehicle sources. But if there were mixing contribution from these two sources, the $\delta^{13}\text{C}$ signal seems insignificant both in tunnel and forest site. Actually their results are consistent with our findings.

b) Szidat et al., Radiocarbon 46 (2004) 475-484, investigated urban summer aerosols with substantial impacts of biogenic SOA and stated that "a possible response of $\delta^{13}\text{C}$ to the influence of atmospheric processes could not be detected".

The implication of ^{14}C and ^{13}C was not the same. Plants like C3 and C4 have different ^{13}C values, but they have same ^{14}C value. So it is possible that the ^{13}C doesn't point to any change of atmospheric processes. This point is a highly advanced topic and it should be explored deeply.

c) Further discussions with other studies are welcome.

2. The procedure of the CO_2 formation from OC and EC for $\delta^{13}\text{C}$ measurement (page 4584, lines 7-11) should be clarified. The described technique for OC ("no oxygen, under vacuum") may evaporate OC, but cannot produce CO_2 .

It is revised in the manuscript. The oxygen molecules come from the CuO catalyst grains which were heating with the remaining carbon in the tube.

Technical corrections 3. One letter is missing in the caption of Figure 3, second line. Correct is: "given as fraction" The caption is revised as suggested by the reviewer.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 4579, 2006.

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