

The authors thank the anonymous referees for their time to review our manuscript and particularly for their valuable comments and suggestions that have significantly improved the manuscript. We have made most of the changes suggested by the reviewers and have outlined these in detail below.

Anonymous Referee #2

The manuscript by Ho et al describes the organic acid and carbonyl concentrations measured in two locations in Beijing in 2007. The aim of the study was to determine the roles of regional transport, local emissions and secondary formation of particulate matter in the air in Beijing. Beijing is one of the largest cities in the world with severe atmospheric pollution and every effort towards cleaner air is certainly beneficial. They managed to show that traffic restrictions are useful in reducing primary pollutants although secondary products were not reduced due to enhanced photochemical aging. These issues are important when planning efficient strategies for air pollution control in China. The paper is well written and clear and I think it is suitable for publication in ACP after minor corrections. My main concern deals with the stability of the samples. The samples were collected seven years ago, which is really long storage time for organic molecules even when kept in -20 °C. When were they analyzed? If they were analyzed only recently, how was the stability of the samples confirmed? The other concern deals detection using FID since there is very often overlapping of other compounds when using FID for detection. The occasional MS analysis does not confirm the purity of the peaks. It would have been better to analyze all the samples using MS detection. The number of samples is small, only ten samples/site and two of the samples were taken during traffic restrictions. This limits the confidence to the results.

Response:

We agree with the reviewer that care must be taken in the stability of organic compounds during sample storage. Our manuscript was prepared in 2014, but samples were measured in 2010, around 2.5 years after samples collection and storage at -20 °C. We consider that it is within the range of uncertainties. The data reported in this study were determined and quantified by both Agilent 6890GC/FID (Palo Alto, CA, USA) and ThermoQuest Trace MS (Austin, TX, USA). We agree with the reviewer that the number of samples is small, which is limited by the CAREBeijing-2007 campaign itself. The campaign was a pilot study to study the effects of the traffic restriction on the air quality of Beijing and to get experience and scientific evidence for the preparation of the 2008 Olympic game. There were only three consecutive days with traffic restriction (17-19 August), and we took measurements on two days (17 and 19 August). The rest was made before and after the traffic control events.

Minor comments:

What is meant by the expression C18:1, C25:0 etc.? I assume the first number is C-number and the latter one refers to the amount of double bonds, but please mention it in the first place.

Response:

It is true that the first number is C-number and the latter one refers to the amount of double bonds. We have explained it in the first place of the revised manuscript.

The Fig.1 is too small in the printed version and the font size too small. You do not need to include the explanations in every panel, once is enough.

Response:

Fig. 1 is revised as suggested by the reviewer.

Fig. 2 should show also the trajectory for 19th August, but it does not.

Response:

Fig. 2c shows the trajectory for 17 and 19 August. As they have similar trajectory, we put two trajectories into one.

Figure 3 would be clearer with colors.

Response:

Fig. 3 is revised (with colors) as suggested by the reviewer.

In Fig. 5 caption please do not use abbreviation R/N, but the whole word.

Response:

We use the whole word instead of abbreviation in the revised version.

When calculating the ratios, did you use all measured compounds with 3 or 4 C atoms?

Response:

We use malonic and succinic acids when calculating the ratios. We have added the full name of the chemical in the first place.

7. The number of samples collected at Yufa was 10 and not 1 as indicated in Table 1?

Response:

Sorry for the typo. It is 10. We have revised in Table 1.