

Interactive comment on “Variation of ambient non-methane hydrocarbons in Beijing city in summer 2008” by B. Wang et al.

Anonymous Referee #1

Received and published: 21 April 2010

In their manuscript, Wang et al. describe measurements of ambient NMHCs in Beijing during periods when different pollution control measures were being implemented before, during and after the 2008 Olympic games. They provide a detailed overview of NMHCs and their sources in Beijing during these periods and the results nicely show the positive effects of implementing stringent emissions controls. The paper is well written, presents original and unique data that is of interest to the community, and is suitable for publication in ACP after addressing a few comments.

Comments

Is it possible to include concentrations of individual NMHC, perhaps as a supplement to the manuscript?

C1955

Have you considered the potential influence of season on NMHC mixing ratios, as it is likely that at least some of the decrease observed in July and August is due to increased reaction with OH during these months relative to June and September?

Along similar lines as the previous comment: Not all of the studies compared to Beijing in Figure 2 were conducted in summer; is it reasonable to make a comparison of NMHC during summer in Beijing to NMHC in winter or spring in other cities? Additionally, as this comparison is only briefly mentioned in the text, it could be removed from the figure/manuscript.

As the non-vehicular source of isoprene was discussed in Section 3.1, I suggest that the discussion of isoprene in section 3.2.1 be moved to section 3.1, and that figure 3b be made a separate figure. Additionally, the correlation between isoprene and a tracer associated with vehicular emissions (e.g. ethyne), or rather the lack thereof, would strengthen the argument that isoprene is by and large from biogenic sources. Has this been considered for this dataset?

There is no reference given for the maximum incremental reactivities (MIRs) used to determine ozone formation potentials, and I believe a brief description of the technique is warranted.

Minor/Technical Comments

Figure 2 would benefit from reformatting; placing the data labels at the bottom of the graph(s) would allow the NMHC axes to be rescaled so that the mixing ratios were better represented and easier to view and interpret. Also, should the label for 2(b) read “propene” rather than “propane”?

p 5567 line 17; p. 5573 line 25; p. 5576 line 4: change NMHCs to NMHC

p 5568 line 10: should read “. . .the corresponding control stages are referred to in the temporal. . .”

p 5575 line 17: should this read “. . .of propene and toluene. . .”?

C1956

p 5575 line 24: please provide a reference for the statement that “Beijing is in an NMHC-sensitive regime” (Zhang and Keding, 2009?).

p 5576 line 4: change to “. . .were counted on the 2nd, 3rd and 4th. . .”

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 5565, 2010.

C1957