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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Variations of O_3 and CO in summertime at a rural site near Beijing" *by* Y. Wang et al.

Anonymous Referee #1

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This paper used the surface measurement over a rural site north of Beijing to study the O3/CO correlation and influencing factor in summer 2006. It well analyzed the measurements and the conclusion is reasonable. Although this paper included some model results, such as Figure 2, the global model results look not helpful on the discussions, even for synoptic situations. All the substantial analysis are based on surface observation and satellite data. In fact, if the paper removed the model-related content, it could become clearer and concise without losing its convincibility though you may want to add more contents to bulk up.

The main point of this paper is that the O3/CO correlation becomes weak or even negative under cloudy condition since pollutants contribute little to O3 production and titration could take place under that condition. You may yield a better analysis using

a simpler photochemical box model if the O3 concentration is mainly determined by local photochemical budgets. If you want to expand the model application to discuss the transported feature, high-resolution and better 3-D model results are expected. In your case study (section 4.3), is there any change on transport feature during the 2-day period? If there is, how much influence comes from upwind, and how much is caused by local O3 budget?

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 10397, 2008.