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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Measurements of volatile organic compounds in the middle of Central East China during Mount Tai Experiment 2006 (MTX2006): observation of regional background and impact of biomass burning" *by* J. Suthawaree et al.

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General comments: Based on VOCs measurements on top of Mount Tai, the manuscript conducted interesting evaluation about the sources of VOCs in the middle of Central East China region. The methodologies are well accepted. The work could be helpful due to the lack of VOCs data in this area.

Response The authors appreciate the reviewer comments. We will try our best to

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Interactive Discussion

Discussion Paper

improve the manuscript according to the reviewer suggestions and comments.

Specific comments: 1. To enhance the introduction and discussion of the manuscript, the Authors are suggested to use more recent researches in China on VOCs, e.g. Source profiles (Liu et al., AE, 2008, 42: 6247-6260), source apportionments for both urban and rural site in PRD (Liu et al., AE, 2008, 42: 6261-6274), VOCs tracers for biomass burning (Xie et al., AE, 2008, 42: 6000-6010), and the VOCs in Beijing city (Shao et al, JGR, 2009, DOI:10.1029/2008/2008JD010863).

Response 1. Thank you very much for your suggestions. Suggested references are added to the manuscript in introduction and discussion sections.

2. The discussion in line 18-21, page 16719, the authors need to be more explicit about chemical regimes of ozone formation, I guess the model resutls indicate that VOCs-limited was true for urban areas, was it the same for remote site (as Mount Tai) and the whole region?

Response 2. The model results provided by Kanaya et al. (2009) reveal NOx limited regime for Mount Tai. The sentence is revised to be more concise and explicit.

3. It could be better if the analysis for the sources of VOCs have support of local (or regional information), the ERs comparison with national inventory was not that convincing. As a background site, the discussion reveals the impact of biomass burning, I wonder if there were any local fires during the measurements.

Response 3. The authors also concerned the issue pointed out by reviewer and try the best to find local and regional scale information for comparison. Nonetheless, to the best of authors' knowledge, there is still very limit information on ERs in the region for C2Cl4, CH3Cl and CH3Br. For ethane and propane and benzene, comparisons of ERs were made with the regional scale information provided by Carmichael et al. (2003). The impact of local biomass burning is believed to be at the minimum owing to the local of the site on the mountain top. Nonetheless, long-range or mid-range transport

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of emission from biomass burning was found to impact VOC mixing ratio observed at this site.

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