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Discussions

Interactive comment on "Development of a high temporal–spatial resolution vehicle emission inventory based on NRT traffic data and its impact on air pollution in Beijing – Part 2: Impact of vehicle emission on urban air quality" *by* J. J. He et al.

Anonymous Referee #1

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In recent years, air pollution related with traffic is becoming serious in major cities in China. In this paper, a high temporal-spatial resolution vehicle emission inventory for 2013 in Beijing has been established and used to evaluate the vehicle emission contribution to ambient pollutant concentrations of NO2 and PM2.5 in Beijing using CUACE model. The quantitative evaluation of vehicle emission contribution based on numerical model method is meaningful for air pollution control and urban

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environmental management. However, the manuscript still requires revisions and deep exploration. Comments: 1. At present, the contribution of vehicle emission to PM2.5 is a hot topic. The research result of contribution in this paper is relatively small. The generation of PM2.5 is a complex chemical process, in addition to the primary emission source, the contribution of the second transformation cannot be ignored. The switch on and off test of emission in model simulation may not be suitable for evaluating the chemical conversion. How do the authors consider it? More explanations need to be illustrated. 2. The spatial distribution of the VEC to NO2 and PM2.5 is different. It needs to be discussed in detail combined with the emission distribution characteristics of high resolution and the wind field. 3. The vehicle emissions have obvious peak characteristics in morning and evening. How the authors consider this in your simulation test? Does the simulated diurnal variation have some characteristics influenced from the peak characteristics? 4. Provide significant test of the VEC and RVEC in summer and winter. 5. INTEX-B inventory is usually INTEX-B2006. 6. In Fig. 3, provide the mean concentration of sites observation. 7. In Fig. 6, adds fluctuation range of the mean VEC. 8. In Fig. 7, adds fitting line and fitting degree.

Please also note the supplement to this comment:
http://www.atmos-chem-phys-discuss.net/15/C6826/2015/acpd-15-C6826-2015-supplement.pdf

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