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Interactive comment on “Correlation between traffic density and particle size distribution in a street canyon and the dependence on wind direction” by J. Voigtländer et al.

Anonymous Referee #2

Received and published: 7 June 2006

The article presents investigations of particle number size distributions measured in a street canyon during a sufficient period of time spanned over six months during winter 2003-2004. The investigations included the effects of traffic density and meteorological conditions. This study is sound and it adds to the current understanding about processes affecting the particle number size distributions in a street canyon. I, therefore, recommend publication in ACP after meeting the following minor comments. These comments will make the script easier to follow for the prospective reader.

- The abstract is well written and it summarizes the main outcomes of the study.
- The introduction needs a slight revision to keep the flow of text and also reviewing

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relevant studies performed in other countries.

-The second and third paragraphs on page 4084 include a part of the results and methodology. These two paragraphs should be re-written and moved to the corresponding sections.

-Section 3.1. can be merged in section 2.2.1.

-The second paragraph on page 4090 that discusses the correlation coefficients between number concentrations and traffic should be supported with a plot that illustrates and distinguishes between correlations with passenger cars and trucks. The authors claim that there were no differences between both correlations; reasonable reasons should be stated in their discussion.

-In section 3.2.2, where regression analysis was presented and discussed, the authors should refer to previous studies where they presented similar findings with respect to the clear dependencies of particle number size distributions on the wind parameter. Several studies were performed in Europe as well as in Scandinavian countries and North America.

-In Section 3.2.3, figure 7 should be referred to at the same places where Figure 8 was mentioned.

-In the last paragraph in the results and discussion section, the authors should support their results agreement with CFD models in street canyons. References should be mentioned or an inclusion of simple model evaluation can be introduced in this study.

-Consequently, after meeting these minor changes, the figures must be mentioned in sequential order.

-In the final revision of the script, the author should fix few typos. Few to mention: P4048-line18, P4086-line20, P4090-lines1 and 3, etc.

-Figures and tables are readable. However, figure 2b is missing.

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