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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Black carbon, particle number concentration and nitrogen oxide emission factors of random in-use vehicles measured with the on-road chasing method" *by* I. Ježek et al.

Anonymous Referee #1

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General Comments This paper addresses very relevant questions about the diesel and gasoline car fleet emission in a European country examining in real world driving conditions the effect of vehicle age, engine power and other parameters on BC, NOx and PN emissions. The idea of measuring the vehicular fleet for these emissions is not new to me, or I think, most people in the atmospheric science community but I think that the quality of these measurements and their applicability to real world driving makes the measurements more significant than previous which either focused on a more limited dataset or used conditions which perhaps were not completely representative of real

world driving. I really only have a couple of issues that I would like to see addressed and some minor technical issues which I think could be improved on. With these minor revisions I think that this will be worthy of publication and a very good addition to the knowledge base regarding vehicular emissions.

Specific Comments

There are a couple of parameters of the experiment for which I would like to know more details. What speed were these vehicles traveling at and what was their acceleration state. Engine RPM's would be great but I realize this is probably not obtainable. I think it is OK not to know that but it would still be useful to know the speed and whether these vehicles were traveling uphill, downhill or over relatively flat terrain.

For Table 1 I would like to know what the size range of particles is that are measured for both the Aethalometer and the FMPS. Does this cover the range of particles we expect to see in engine exhaust?

Finally I just wonder whether there was anything about the roadways sampled which would potentially skew any results. I mean for instance was a certain type of heavy duty truck more predominate on the roadways sampled than on the average roadway? Or a certain type of car? I don't have any reason to think this would be the case but I would be concerned about this if doing the measurements and I suspect the authors were, just want to be sure.

Technical Comments/Corrections

Recommend you reword pg 15359 lines 23-26 "They concluded that restricting the emissions of trucks only in Beijing is not sufficient to reduce traffic related air pollution in there due to the number of out of area trucks that operate in Beijing".

There are a few typos recommend you reread carefully to catch nothing major but fleet versus feet bridge words that aren't needed things like that.

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