

## ***Interactive comment on “On the time-averaging of ultrafine particle number size spectra in vehicular plumes” by X. Yao et al.***

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This is a very short article containing interesting data which to my opinion could be useful if more constrained and amended by additional assessments.

The too numerous citations preclude any informative help and in this context the introduction especially should be tightened and cited papers carefully chosen. I believe that motivations for such a work are primarily emission process studies; however this is not explicitly postulated and it might be argued that for a health point of view average data are probably more adequate. Some basic assessments appear evident such as bimodal distribution distortion or the appearance of 3 modes when the traffic may be characterised as a "mixed" traffic. Conversely what is (for me) most important is not actually clarified enough or even stated. Discussion could be substantiated by

the followings: - what is the size distribution to be characteristic of plumes from gasoline-powered vehicles? light duty diesel? high duty diesel? - for these distributions what mode (and properties: diameter, sigma) can be attributed to nucleation (secondary particles), primary particles, particle growth by condensation and/or coagulation? - what is the BC particle size?

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Interactive comment on Atmos. Chem. Phys. Discuss., 6, 6825, 2006.

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Interactive Discussion

Discussion Paper