

Introductory Comments In-Vehicle Air Pollution Exposure Measurement and Modeling

Contract 07-310

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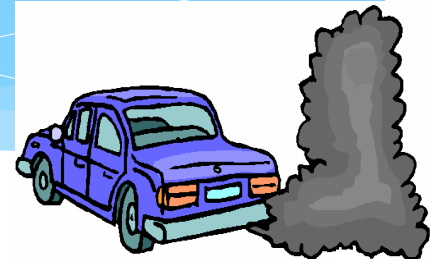
Findings From ARB Studies

- In-vehicle exposures contribute ~ 1/3 of total daily PM2.5 exposure from only 6% of total activity time¹
- In-vehicle concentrations of UFP up to an order of magnitude higher than ambient levels²
- In-vehicle concentrations of UFP higher on diesel dominated freeways³

¹ Fruin et al Atmospheric Environment 38 (2004) 4123-4133

² Westerdahl et al Atmospheric Environment 39 (2005) 3597-3610,
Zhu et al Environmental Science and Technology 41 (2007)

³ Hinds et al J. Air & Waste Mgmt. Assoc, 58:424-434 (2008)



Significance of the Study

- In-vehicle exposure can contribute a significant fraction of a person's overall PM_{2.5} and UFP pollutant exposure
- This study developed and validated in-vehicle exposure models
 - models can be used to study health impacts
- Related ARB Study: Reducing in-vehicle exposure by high efficiency filtration