

## ***Interactive comment on “Tracer concentration profiles measured in central London as part of the REPARTEE campaign” by D. Martin et al.***

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The analysis of the vertical profiles is based on Equation (1), which appears to be incorrect. Its current form is

$$C(z)/C(0)=\exp(-bz^s) \quad (1)$$

In this equation,  $b$  has units and cannot be a constant. The correct form is

$$C(z)/C(0)=\exp(-b(z/z_{\text{bar}})^s) \quad (2)$$

where  $z_{\text{bar}}$  is the mean height of the plume. See van Ulden(1978, Atmospheric Environment, 12, 2125-2129) for a discussion of the formulation.

The authors have collected data that can provide insight into dispersion in urban ar-

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eas. However, the interpretation of the data needs to be improved substantially before the paper can be published. The data needs to be interpreted using an up-to-date theoretical framework. The sonic anemometer and the Lidar provide boundary layer parameters that can be used to interpret the behavior of the plume; Briggs stability classes date back to the 60s, and might be useful only if turbulence measurements are not available. They are rarely used in current literature.

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Interactive comment on Atmos. Chem. Phys. Discuss., 9, 25245, 2009.

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