Atmos. Chem. Phys. Discuss., 9, C9503–C9504, 2010
www.atmos-chem-phys-discuss.net/9/C9503/2010/

Atmospheric Chemistry and Physics Discussions

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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Received and published: 9 January 2010

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(-bzˆs) (1)

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

C(z)/C(0)=exp(-b(z/z_bar)ˆs) (2)

where z_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-

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.

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