

Abstract Submitted
for the DFD11 Meeting of
The American Physical Society

Influence of local parameters on the dispersion of traffic-related pollutants within street canyons STYLIANI KARRA, LIORA MALKI-EPSHTEIN, UCL, MARTIN HYDE COLLABORATION¹ — Ventilation within urban cities and street canyons and the associated air quality is a problem of increasing interest in the last decades. It is important for to minimise exposure of the population to traffic-related pollutants at street level. The residence time of pollutants within the street canyons depends on the meteorological conditions such as wind speed and direction, geometry layout and local parameters (position of traffic lane within the street). An experimental study was carried out to investigate the influence of traffic lane position on the dispersion of traffic-related pollutants within different street canyons geometries: symmetrical (equal building heights on both sides of the street), non-symmetrical (uniform building heights but lower on one side of the street) and heterogeneous (non-uniform building heights on both sides of the street) under constant meteorological conditions. Laboratory experiments were carried out within a water channel and simultaneous measurements of velocity field and concentration scalar levels within and above the street canyons using PIV and PLIF techniques. Traffic -related emissions were simulated using a line emission source. Two positions were examined for all street geometries: line emission source was placed in the centre of the street canyon; line emission source was placed off the centre of the street.

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Date submitted: 12 Aug 2011

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