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THE DAPPLE TRACER EXPERIMENTS – LESSONS FROM CASE BY CASE ANALYSES

Alan Robins and the DAPPLE Consortium

The DAPPLE project concentrated on short range dispersion of traffic pollutants and hazardous emissions in urban areas, using a region of central London as the study area. Over 50 tracer dispersion experiments have been carried out at the DAPPLE site, providing an excellent data-set for evaluating the performance of urban dispersion models, in particular those used for regulatory or emergency response purposes. Such studies generally concentrate on the statistics of model performance and do not reveal the detailed information that the data contain, which often only comes to light from case by case examination of the individual experiments. Some examples will be selected to show how short-range dispersion is affected by wind direction relative to the local street network and the characteristics of that network. In particular, the issues of upwind and rapid lateral spread will be discussed, and the probable influence of traffic in these processes illustrated. A simple model describing the latter will be used to support the analysis.