

A NUMERICAL STUDY OF THE INFLUENCE OF BUILDING GEOMETRY ON THE WIND AND DISPERSION CHARACTERISTICS IN URBAN AREAS

V. ASSIMAKOPOULOS^{1,2}, G. THEODORIDIS¹, N. MOUSSIOPOULOS¹ and H.M. APSIMON²

*¹Laboratory of Heat Transfer and Environmental Engineering, Aristotle University
Thessaloniki, Box 483, GR-54006, Thessaloniki, Greece*

²Imperial College London, Centre of Environmental Technology

ABSTRACT

Two two-dimensional multiple street canyon configurations are studied using the microscale model MIMO, a square one with building height equal to the street width and a deep one with a building height twice as big as the street width. A line source of a tracer gas is applied at the bottom of one street canyon for modeling street-level traffic emissions. The flow fields resulting from the simulations correspond to the patterns observed in street canyons. The computed concentration fields for both cases are in excellent agreement with tunnel experimental data.