

Abstract Submitted
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Progress in PDPA Measurements of Buoyancy Driven Flow in the Indoor Environment IAN SPITZER, DAVID MARR, MARK GLAUSER, Syracuse University — A great deal of research has been conducted in order to model particle motion in indoor spaces near the human body. The latest set of experiments conducted in the Indoor Flow Laboratory at Syracuse University focus on PDPA measurements in the breathing zone of a breathing thermal manikin. Phase Doppler Particle Anemometry (PDPA) measurements provide particle size, concentration, and velocity data. A closed loop ventilation system introduces seed particles into the 288 ft³ (8×6×6) chamber at a velocity comparable to that of a displacement ventilation system in order to isolate the thermal effects of the heated body. The ability to relate the pollutant concentrations near the floor to those found within the breathing zone is critical in order to assess the capacity of the human thermal plume to act as a pump, thereby transporting PM into the breathing zone.

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