

Abstract Submitted
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Optical measurements of jet gas and bed particle velocity distributions in a 2D bubbling fluidized bed¹ ALEXANDER MYCHKOVSKY, STEVEN CECCIO, University of Michigan — A laser Doppler velocimetry (LDV) measurement technique has been developed to obtain spatially and temporally resolved measurements of jet gas and bed particle velocities in a 2D bubbling fluidized bed. The LDV system was configured to eliminate spurious optical intensity fluctuations, which can contaminate velocity measurements in optically dense flows. The jet gas was seeded with ice crystals, which were formed by rapidly condensing and freezing the moisture in the jet air just prior to injection. LDV bursts from the bed particles and gas tracer ice crystals were simultaneously recorded to obtain the particulate and gas phase velocities at a given location within the jet plume in a non-intrusive manner.

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