

Abstract Submitted
for the DFD06 Meeting of
The American Physical Society

A Parametric Study of the Induced Recirculation Zone using Single/Double Planar Jet Injection¹ JACK MOODY, DAVID FORLITI, KARREEM AHMED, State University of New York at Buffalo — Planar jet injection into a cross flow induces a large-scale recirculation zone. The relative importance of momentum and mass flux ratios is experimentally studied using injection slots having different widths. To acquire additional secondary control of the recirculation zone, a second downstream slot is employed with the objective of tailoring the recirculation bubble characteristics. Blowing and suction were explored for the downstream slot location. The control of dominant frequencies is documented for different operating conditions and geometries. The ability to control the mean and turbulent characteristics and vortex shedding frequency through multiple injection jets will aid in improving flame holding, burning rates, and control of combustion instabilities for combustion devices.

¹Supported by ONR contract N00014-06-1-0498.

Jack Moody
State University of New York at Buffalo

Date submitted: 04 Aug 2006

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