

Abstract Submitted  
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**Vorticity Based Intermittency – Low Speed Side of A Single Stream Shear Layer** JOHN FOSS, Michigan State University, Emeritus, KYLE BADE, Spraying Systems Co., RICHARD PREVOST, LaVision Inc., DOUGLAS NEAL, LaVision, Inc. — A single stream shear layer is one of the canonical free shear flows. It also appears as the near field of a planar jet well upstream of the merging shear layers. It has two entraining boundaries: i) high speed parallel entrainment and ii) low speed perpendicular entrainment. The latter region is given detailed study by the authors. The exceptionally careful design and fabrication (Morris and Foss (2003)) of the  $R(\theta) = 6.5 \times 10^4$  facility delivered irrotational entrainment fluid which allowed PIV images to identify the viscous super layer (VSL). The in-plane velocity components:  $u$  and  $v$ , as well as the transverse vorticity  $\omega_z$  were obtained for all points in the image. The striking features of this region are manifest in the strong vortical motions with very weak streamwise motion:  $\bar{u}/U_0 \leq 0.03$ . Measures of the vortical motions will be presented. S.C. Morris and J.F. Foss (November 2003) “Turbulent boundary layer to single-stream shear layer: the transition region”, *Jour. Fluid Mechanics*, **494**, pp. 187-221.

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