

Abstract Submitted
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A PIV Study of Compressibility in a Turbulent Subsonic Axisymmetric Jet ISAAC CHOUTAPALLI, University of Texas - Pan American — An experimental study has been undertaken to study the effect of nozzle exit Mach number on the flow field characteristics of a turbulent round free jet. Particle Image Velocimetry (PIV) is used as a means of measurement. The Mach numbers considered are 0.30, 0.65 and 0.80. The measurements show that the centerline mean velocity variation, the radial profiles of mean velocity and turbulence quantities within the shear layer can be collapsed on to single curves over the range of Mach numbers considered. The data further shows that it is possible to represent the shear layer mean velocity profile for the turbulent free jet in the subsonic Mach number range with a single analytical expression.

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