

Abstract Submitted
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Effect of free stream turbulence on the entrainment characteristics of jets¹ TOMOAKI WATANABE, Nagoya University, 464-8603 Nagoya, Japan, CARLOS B. DA SILVA, LAETA, IDMEC, Instituto Superior Tecnico, Universidade de Lisboa, Av. Rovisco Pais, 1049-001 Lisboa, Portugal, YASUHIKO SAKAI, KOUJI NAGATA, Nagoya University, 464-8603 Nagoya, Japan, NAGOYA UNIVERSITY TEAM, LASEF TEAM — Direct numerical simulations of turbulent planar jets are used to analyze the effects of free stream turbulence on the entrainment characteristics and enstrophy dynamics near the turbulent/turbulent interface (TTI) that separates strong turbulence (inside the jet shear layer) from weaker turbulence outside of the jet. The higher the integral scales and turbulence intensities in the free stream the more effects it has on the jet shear layer, and for strong free stream turbulence the viscous superlayer is absent from the jet edges.

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