

Abstract Submitted
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Relation of Zero crossing with dissipation and Production scales in Free shear flows. PRAMOD KUMAR, Indian Institute of Science — Statistical properties of zero crossing of plane jet and plane mixing layer and its relation with dissipation and production scales is studied. The variation of relation between these scales in cross stream direction is investigated using direct numerical simulation results. The ratio, Λ/λ and Λ/λ_P are found out to be of order unity. The probability density function of the time interval between successive zero crossing of stream-wise velocity has been found to be varying exponentially. Similar analysis has been performed for cross stream fluctuation components and Reynolds stress $u'v'$ and results. Strong departure of these turbulent flows from Gaussianity still yielded these results like Gaussian signals as has been found for other flows like boundary layer, wakes and heated jets as well.

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