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Eulerian and lagrangian statistics across the turbulent/non-turbulent interface in turbulent jets JOSÉ ALEXANDRE DIOGO, RODRIGO TAVEIRA, CARLOS DA SILVA, IST - Technical University of Lisbon — Direct numerical simulations (DNS) of turbulent planar jets are used to obtain Eulerian and Lagrangian statistics of the flow across the turbulent/nonturbulent (T/NT) interface, separating the turbulent and the irrotational flow regions. The Eulerian statistics used here consist in conditional statistics made in relation to the distance from the T/NT interface that eliminate the large scale intermittence affecting classical eulerian statistics near the jet edge. For the Lagrangian statistics we use tracers and study their statistics during the entrainment. We focus on the enstrophy characteristics and on the mechanism of enstrophy generation and associated time and length scales as well as on the relative importance between engulfing and nibbling mechanisms.

Carlos da Silva
IST - Technical University of Lisbon

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