

Abstract Submitted  
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**Small scale entrainment characteristics in variable density turbulent jets** PEDRO COSTA, CARLOS DA SILVA, IST - Technical University of Lisbon — Direct numerical simulations (DNS) of turbulent planar jets with different densities in the irrotational and in the turbulent region are used to assess the small scale characteristics associated with the entrainment in turbulent jets. The mean thickness of the enstrophy jump at the turbulent/nonturbulent (T/NT) interface separating the turbulent and the irrotational flow regions is slightly bigger in variable density than in incompressible jets, which may be attributed to the more elongated shape of the coherent vortices at that location. Moreover, the characteristic velocity jump is also bigger which can be explained by a momentum balance made in a control volume near the T/NT interface, as done in recent works for the incompressible case. Finally, variable density jets also display smaller (negative) mean entrainment conditional velocity profiles compared to the incompressible case.

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