

Abstract Submitted  
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**LES of compressible piloted round Jet.**<sup>1</sup> HOLGER FOYSI, SUTANU SARKAR, Mechanical and Aerospace Engineering, UCSD San Diego — The mixing efficiency in low Mach number compressible jets is studied using large eddy simulations. A highly accurate compressible flow solver in cylindrical coordinates has been developed with the ability to simulate flames with infinitely fast chemistry or with a reduced chemical mechanism. Using configurations similar to those of the Sandia Flames, jets up to density ratios of 7 and non-premixed turbulent diffusion flames are simulated. The influence of the density ratio and finite rate chemistry on the mixing process is investigated. The behavior of the jet half width, center-line velocity decay as well as various turbulent quantities are reported.

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