Abstract Submitted
for the DFD16 Meeting of
The American Physical Society

Comparison of Turbulence–Chemistry Interaction Models in the Large Eddy Simulation of High-Speed Combustion. WENHAI LI, KEN ALABI, TTC Technologies, Inc. Centereach, NY, FOLUSO LADEINDE, ZHIPENG LOU, State Univ of NY- Stony Brook — In this study, three turbulence-chemistry interaction models: the flamelet, eddy-breakup (EBU), and laminar chemistry models, are compared in the large-eddy simulation (LES) of high speed combustion. It is the case that the simple models still find extensive applications, with fairly acceptable results in many instances. The standard flamelet model developed for low Mach number flows has been modified to account for compressibility effects in supersonic combustion. The comparison exercise has been based on the bluff-body flames that occur under high-speed conditions.

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Date submitted: 07 Aug 2016 Electronic form version 1.4