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Validation of the Multi-Environment Conditional PDF Model with Detailed Kinetics in Planar Jet Flames SEAN SMITH, RODNEY FOX, Iowa State University, JACQUELINE CHEN, EVATT HAWKES, Sandia, CRF — The multi-environment conditional probability-density function (MECPDF) model has been generalized to account for variable density and multiple reacting scalars. An *a priori* validation of the model has been completed using the direct-numerical simulations (DNS) of temporally-evolving planar jet flames with detailed CO/H2 kinetics (E. R. Hawkes *et al.*, Proc. of the Combust. Inst., 31, in press.) The three-dimensional reacting DNS simulations included up to 500 million grid points and Reynolds numbers up to 9,000. Special considerations for the MECPDF model with multiple scalars will be discussed including: calculation of the weights and abscissas from the moments; and the multiple-conditioning requirement.

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