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Integral Method and Eigenspace Decomposition for RANS Turbulent Mixing Flows WADE SPURLOCK, Stanford University, ERIC PARISH, University of Michigan, DANIEL ISRAEL, Los Alamos National Laboratory, LANL COMPUTATIONAL PHYSICS SUMMER WORKSHOP COLLABORATION — Integral methods can be used to obtain low-order dynamical systems which approximate the solution of RANS models. Such techniques are beneficial for calibrating coefficients and verifying a model for flows away from self-similarity. We apply an integral method approach to turbulent mixing flows and compare analytic results to full-field RANS simulations in xRage, a code developed at Los Alamos National Laboratory. Flows that exhibit late time self-similarity are considered. Eigenspace decomposition is then used to identify dominant solution characteristics and visualize higher dimensional closure models. Results are shown for the temporal shear and Rayleigh-Taylor layers.

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