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**Evaluation of Turbulence Mix Model Constants for Low Atwood Number Rayleigh-Taylor Flows** ARINDAM BANERJEE, ROBERT A. GORE, MALCOLM J. ANDREWS, Los Alamos National Laboratory — Progress on evaluation of turbulence mix model constants for the  $\kappa$ - $\varepsilon$  and BHR mix models will be presented. Our detailed measurements of Rayleigh-Taylor (RT) mixing at low Atwood number ( $A_t = 0.04$ ) in the Texas A&M air-helium gas channel facility has allowed us to evaluate several mix model constants used in the  $\kappa$ - $\varepsilon$  and BHR models. We have measured the various terms allowing us to compute (measure) the model constant  $C_\mu$ . The measured value of  $C_\mu$  is 0.3, significantly higher than the usual value of 0.09 assigned for shear flows. In addition, model constants are evaluated based on a self similar analytical solution using top-hat and parabolic profiles, and then compared with a detailed one-dimensional transient numerical solution. Various assumptions at the low Atwood limit that have been used for evaluating the various model constants will be discussed.

Arindam Banerjee  
Los Alamos National Laboratory

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