

Abstract Submitted
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An Approach to Radiation Hydrodynamics Within a Generalized Continuum Mixture Theory JIM REYNOLDS, GABRIELLE MILLER, MELVIN BAER, SHANE SCHUMACHER, Sandia National Laboratories — Mixed material cells have long posed challenges for radiation hydrodynamic treatments in multi-physics codes. Baer and Nunziato [1] developed a two-phase mixture formulation which is recently expanded by Baer and Schumacher to a generalized model. We present an extension to this generalized continuum mixture theory by this model incorporating energy-based gray radiation diffusion in a multi-component fluid. The extended model is presented along with a numerical approach including verification examples. [1] Baer, M.R. and Nunziato, J.W., *Int. J. Multiphase Flow*, Volume 12, No. 6 1986

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