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A 3D, Parallel, Solution-Adaptive Model for Radiative Shocks<sup>1</sup> KENNETH POWELL, PAUL DRAKE, JAMES HOLLOWAY, BART VAN DER HOLST, SMADAR KARNI, WILLIAM MARTIN, ERIC MYRA, IGOR SOKOLOV, QUENTIN STOUT, G. TOTH, Center for Radiative Shock Hydrodynamics, University of Michigan — In this talk, a radiation hydrodynamics code for simulating radiative shocks will be described. The high-level validation problem for the code is one in which a 1 ns, 4 kJ laser pulse irradiates a Be disk, driving a shock into a Xe-filled plastic tube. The radiative precursor to the shock heats the wall of the tube, so that the there is a complex interaction among the shock driven by the ablated material from the wall, the laser driven shock, and the Be-Xe interface. The code is three-dimensional, solution-adaptive, and parallel. The radiation transport model in the current code is based on gray diffusion; work is underway to support higher-fidelity radiation transport models. The methodology used in the code and preliminary results of simulations will be presented.

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Kenneth Powell Center for Radiative Shock Hydrodynamics, University of Michigan

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