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DRACO Development for Modeling 3D Instabilities[1] MILAD FATENEJAD, University of Wisconsin - Madison, TIMOTHY COLLINS, U. of Rochester - Laboratory for Laser Energetics, GREGORY MOSES, University of Wisconsin - Madison, RADHA BAHUKUTUMBI, PATRICK MCKENTY, VLADIMIR SMALYUK, U. of Rochester - Laboratory for Laser Energetics — Additional features have been included in the DRACO Lagrangian radiation hydrodynamics code enabling realistic 3D simulation of laser driven ablation, shocks, and fluid instabilities in low-Z plasmas. Since last reported (Fatenejad and Moses, Bull. APS 51, 209(2006).), DRACO now includes 3D laser ray tracing to model laser absorption and hydrodynamic restoring forces to counteract artificial grid distortions. Two temperature (electron and ion) flux-limited thermal transport has been included. DRACO is now being used to model the acceleration of a slab of Cu-doped Be into liquid deuterium via laser ablation. The slab has single mode perturbations imposed on it both at the ablation front and at the D-Be interface. Preliminary simulations of fluid instability growth will be presented using the improved DRACO 3D modeling. These simulations are motivated by similar recent experiments performed at the OMEGA laser facility.

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