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Validating equation of state models in the ablative Richtmyer-Meshkov regime for indirect-drive inertial confinement fusion capsules ERIC LOOMIS, Los Alamos National Laboratory, DAVE BRAUN, Lawrence Livermore National Laboratory, STEVE BATHA, Los Alamos National Laboratory, CHARLES SORCE, OTTO LANDEN, Lawrence Livermore National Laboratory — Recent simulations have shown that isolated features on the outer surface of Inertial Confinement Fusion (ICF) ignition capsules can profoundly impact capsule performance by leading to mixing in the hotspot. Controlling the growth of these artifacts is complicated due to uncertainties in equation of state (EOS) models used in simulation codes. Here we report on measurements pertaining to the growth of isolated defects due to ablative Richtmyer-Meshkov in CH capsules in order to validate these models. Face-on transmission radiography was used to measure the evolution of Gaussian bump arrays in plastic targets. Au halfraums heated to radiation temperatures near 70 eV using 15 beams in a 5 ns pulse from the Omega laser (Laboratory for Laser Energetics, University of Rochester, NY) indirectly drove the samples. Shock speed measurements made with Omega's Active Shock BreakOut (ASBO) diagnostic in conjunction with the x-ray flux recorded by a soft x-ray power diagnostic (DANTE) were used to determine drive conditions in the target. These measurements show that SESAME 7592 is in closer agreement with shock speed and bump growth data compared to LEOS 5310.

Eric Loomis
Los Alamos National Laboratory

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