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Reduction of ablative Richtmyer-Meshkov growth on planar CH targets with a high-Z overcoat MAX KARASIK, J.L. WEAVER, V. SERLIN, J.W. BATES, A.L. VELIKOVICH, Plasma Physics Division, Naval Research Laboratory, Y. AGLITSKIY, SAIC — Thin (400-800Å) high-Z overcoat on the laser side of the target can be effective in suppressing laser imprint [S. P. Obenshain et al. Phys. Plasmas 9, 2234 (2002)]. The present experiments investigate the effect of the coating on instability seeding by target imperfections. Evolution of a pre-imposed ripple is observed by face-on x-ray radiography using Bragg reflection from a curved crystal coupled to an x-ray streak camera. X-ray flux from the high-Z overcoat is monitored using absolutely calibrated time-resolved x-ray spectrometers. The overcoat is found to change the ablative Richtmyer-Meshkov (RM) stage of the ripple evolution, which forms the seed for the subsequent RT growth, due to the initial x-ray ablation with the high-Z overcoat. The measurements show a significant reduction in the ripple amplitude growth due to the ablative RM for overcoated targets, resulting in lower initial amplitudes for RT growth. This work is supported by US DOE/NNSA.

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