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**Pre-imposed ripple evolution on planar CH targets with a high-Z overcoat** MAX KARASIK, Y. AGLITSKIY, SAIC, McLean VA, V. SERLIN, J.L. WEAVER, J.W. BATES, Naval Research Laboratory, Washington DC — It has been found previously that a thin (400-800Å) high-Z overcoat on the laser side of the target can be effective in suppressing laser imprint [S. P. Obenschain et al. Phys. Plasmas 9, 2234 (2002)]. In those and subsequent experiments, it was found that the overcoat also results in an apparent delay in growth of a front-surface pre-imposed sinusoidal ripple without affecting the RT growth rate. The cause of this apparent delay is hypothesized to be a change in the ablative Richtmyer-Meshkov (RM) phase 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. In order to investigate this effect, experiments are performed with a pre-imposed ripple amplitude large enough to be observable from the beginning of the laser pulse. Evolution of the ripple due to ablative RM oscillation and transition to RT growth is then 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. Simultaneous side-on radiography using a curved crystal allows target trajectory measurement for comparison with simulations. This work is supported by US DOE/NNSA.

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