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**Imprinting of Pre-Imposed Laser Perturbations on Targets With a High-Z Overcoat** MAX KARASIK, J.L. WEAVER, Plasma Physics Division, Naval Research Laboratory, Washington DC, Y. AGLITSKIY, Leidos, Reston VA, J. OH, RSI, Lanham MD, A.J. SCHMITT, J.W. BATES, V. SERLIN, S.P. OBENSCHAIN, Plasma Physics Division, Naval Research Laboratory, Washington DC —
In direct drive ICF, most of the laser imprint is expected to occur during the initial part of the laser pulse, which generates the first shocks necessary to compress the target to achieve high gain. Previous experiments found that a thin (400–800Å) high-Z (Au or Pd) overcoat on the laser side of the target is effective in suppressing broadband imprint[1,2] The overcoat initially absorbs the laser and emits soft x-rays that ablate the target, forming a large stand-off distance between laser absorption and ablation and smoothing the drive perturbations. We investigate the effectiveness of imprint suppression for different spatial wavelengths via perturbations imposed on top of the beams smoothed by Induced Spatial Incoherence (ISI). Measurements of areal mass non-uniformity on planar targets driven by the Nike KrF laser are made by curved crystal x-ray radiography. Simultaneous side-on radiography allows observation of the layer dynamics and monitoring of the laser absorption - target ablation stand-off. X-ray flux from the high-Z layer is monitored using absolutely calibrated time-resolved x-ray spectrometers. Work supported by the Department of Energy/NNSA.

[1]Obenschain et al., Phys. Plasmas 9, 2234 (2002)
[2]Karasik et al., submitted for publication.

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