

Abstract Submitted
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Measuring shell- ρR perturbations in NIF capsule implosions near peak velocity¹ B.A. HAMMEL, V.A. SMALYUK, T. DOEPPNER, S.W. HAAN, T. MA, L. PICKWORTH, H.A. SCOTT, LLNL — Quantitative measurements of shell- ρR perturbations in capsules near peak implosion velocity (PV) are challenging. An external backlighter samples both sides of the shell, unless a re-entrant cone is used (potentially perturbing implosion). Emission from the hot core, after shock-stagnation and prior to PV, can act as a self-backlighter, providing a means to sample one side of the capsule, if emission levels can be increased over nominal values. Adding high-Z gas ($\sim 1\%$ Ar) to the capsule fill in Symcaps (^4He or propane), should produce a continuum backlighter with significant ($\sim 30\times$) increase in emission at $h\nu \sim 8$ keV over nominal fills. From images of the transmitted self-emission, above and below the K-edge of an internally doped high-Z layer (Cu), we can infer the growth at PV of imposed and inherent surface roughness at mode ~ 60 with amplitudes ~ 50 -nm.

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