

Abstract Submitted  
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**Performance of Beryllium Targets with Full-scale Capsules in Low-fill 6.72-mm Hohlräume on the National Ignition Facility**<sup>1</sup> A. N. SIMAKOV, S. A. YI, J. L. KLINE, G. A. KYRALA, E. N. LOOMIS, D. C. WILSON, T. S. PERRY, S. H. BATHA, LANL, E. L. DEWALD, J. E. RALPH, D. J. STROZZI, LLNL — When used with full-size beryllium (Be) capsules [1], high-fill 5.75-mm hohlraums exhibit significant drive degradation via laser backscatter and “missing energy”. Also, hard to simulate cross-beam energy transfer (CBET) must be used to control the implosion symmetry. Low-fill ( $\leq 0.6$  mg/cm<sup>3</sup>) 6.72-mm hohlraums offer improved drive efficiency and the symmetry tunability without the CBET. In FY16, we carried out an exploratory campaign to evaluate performance of full-size Be capsules in such hohlraums. Specifically, we have performed a fill-density scan with a three-shock, 9.5-ns pulse and found that an appropriate laser beam re-pointing and outer-quad splitting results in approximately 5% laser backscatter at fill densities  $\leq 0.3$  mg/cm<sup>3</sup>, with the implosion becoming less oblate as the fill-density decreases. We also plan to perform an implosion with a lower-foot, 12.6-ns pulse, to observe a more prolate symmetry. [1] J. L. Kline et al., Phys. Plasmas 23, 056310 (2016).

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