

Abstract Submitted
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Development of backlit thin shells and foam balls on the NIF for diagnosing shape swings during the foot pulse¹ GARETH HALL, PETER AMENDT, OTTO LANDEN, ANDREA KRITCHER, DAVID BRADLEY, RICHARD TOWN, Lawrence Livermore National Laboratory — The performance of indirect-drive ICF capsules is extremely sensitive to low-mode P2 and P4 asymmetries during the foot of the pulse, the trough in particular.² These asymmetries can cause non-radial velocity and density distortions that cannot be corrected later in the implosion, significantly degrading fusion yield. X-ray radiography of thin-shell capsules³ and foam balls⁴ has been demonstrated as a means of diagnosing foot asymmetries on the OMEGA and NOVA lasers. The design and implementation of these techniques for upcoming experiments on the NIF will be discussed. In these experiments, the target will be driven using only a picket and trough pulse, and x-ray radiography used to measure asymmetries that develop during implosion. (IM: LLNL-ABS-657009)

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³R. K. Kirkwood et al, Phys. Plasmas 16, 012702 (2009)

⁴P. Amendt et al, Phys. Rev. Lett. 77, 3815 (1996)

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