

Abstract Submitted  
for the DPP07 Meeting of  
The American Physical Society

**Single-Beam Smoothing Requirements for Wetted-Foam, Direct-Drive NIF Ignition Target Designs** T.J.B. COLLINS, J.A. MAROZAS, P.W. MCKENTY, P.B. RADHA, S. SKUPSKY, J.D. ZUEGEL, Laboratory for Laser Energetics, U. of Rochester — Wetted-foam, direct-drive target designs are a path to high-gain experiments on the National Ignition Facility (NIF). Previous studies have shown that reduction of single-beam nonuniformity is central to target performance of designs incorporating solid CH ablaters.<sup>1</sup> It has also been shown that at 1 MJ, even a wetted-foam target with a low IFAR and low acceleration-phase instability requires a minimum of two-dimensional (2-D) smoothing by spectral dispersion (SSD)<sup>2</sup> for ignition.<sup>3</sup> We show the results of 2-D simulations indicating that this is also the case for 1.5-MJ, wetted-foam, direct-drive NIF target designs. Some possible avenues for single-beam smoothing in the absence of 2-D SSD will be briefly presented. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement DE-FC52-92SF19460.

<sup>1</sup>P. W. McKenty *et al.*, Phys. Plasmas **8**, 2315 (2001).

<sup>2</sup>S. Skupsky *et al.*, J. Appl. Phys. **66**, 3456 (1989).

<sup>3</sup>T. J. B. Collins *et al.*, Phys. Plasmas **14**, 056308 (2007).

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Date submitted: 19 Jul 2007

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