

Abstract Submitted
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**Effect of Energetic Electrons Produced by Raman Scattering on
Hohlraum Dynamics**¹ D. J. STROZZI, D. S. BAILEY, T. DOEPPNER, L. DIVOL, J. A. HARTE, P. MICHEL, C. A. THOMAS, LLNL — A reduced model of laser-plasma interactions, namely crossed-beam energy transfer and stimulated Raman scattering (SRS), has recently been implemented in a self-consistent or “inline” way in radiation-hydrodynamics codes¹. We extend this work to treat the energetic electrons produced by Langmuir waves (LWs) from SRS by a suprathreshold, multi-group diffusion model². This gives less spatially localized heating than depositing the LW energy into the local electron fluid. We compare the resulting hard x-ray production to imaging data on the National Ignition Facility, which indicate significant emission around the laser entrance hole. We assess the effects of energetic electrons, as well as background electron heat flow, on hohlraum dynamics and capsule implosion symmetry. ¹D. J. Strozzi et al., Phys. Rev. Lett. (submitted). ²D. S. Kershaw, LLNL report UCRL-50021-80, p. 3-78 (1980).

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