

Abstract Submitted
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Analysis of the Effect of a High- Z -doped CH Ablator and Glass Ablators on Preheat and Hard X-Ray Radiation from Two-Plasmon Decay Electrons J.A. DELETTREZ, J.P. KNAUER, V.N. GONCHAROV, P.B. RADHA, C. STOECKL, A.V. MAXIMOV, Laboratory for Laser Energetics, U. of Rochester, J.A. FRENJE, PSFC, MIT, D. SHVARTS, NRCN — The generation of preheating electrons from two-plasmon decay (TPD) can be mitigated by doping CH shells with Si or Ge or by using glass ablators. Simulations were carried out with a recent model for the source of the TPD fast electrons based on the results of warm-CH-shell implosions. The source energy varies as the threshold parameter $\sim I \times L/T_e$ at quarter critical. The presence of high- Z dopants increases the temperature, which leads to a decrease in the energy deposited into the fast electrons and a reduction in the resulting preheat. The presence of high- Z dopants, however, leads to higher radiation preheat. This presentation will discuss the effect of the dopants on the fast-electron source and the trade-off between the two forms of preheat in terms of the expected ρR 's for both warm-CH and cryogenic implosions. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

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