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Magnetic, Material and Geometric Focusing Aids in Hot Electron Driven Fast Ignition[1] R.J. MASON, R.J. FAEHL, R.C. KIRKPATRICK, Research Applications Corp — We study the effects of B-fields, material interfaces and resistivity on the focusing of hot electrons in various target geometries using the implicit hybrid simulation code ePLAS. The model deposits laser light near critical and generates a hot electron component, either fluid or particle, that moves through E & B-fields computed by the implicit moment method [1], while dragging on the "cold" background electrons and scattering off the local ions. Picosecond pulses at $\sim 10^{20}$ W/cm^2 can produce highly divergent electron emission in Cu foils and in prepulsed cone targets [2]. We examine the influence of spontaneous and/or external $B-$fields, resistivity and density changes at target interfaces. We study how target contouring and the pulse history might be optimally configured to aid re-focusing of the hot electron energy for more localized target heating. We compare results for fixed Atomic Number with those from variable Z values determined from the Sesame EOS tables.

[1] R. J. Mason, J. Comp. Phys. **71,** 429 (1987)
[2] R. J. Mason, PRL **96,** 035001 (2006).

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