

Abstract Submitted  
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**Self-Generated Magnetic Field Effects in National Ignition Facility Capsule Simulations**<sup>1</sup> JOSEPH KONING, LLNL — The self generated magnetic field effects for the National Ignition Facility tritium-hydrogen-deuterium (THD) capsule design are simulated in 2D using the multiphysics code HYDRA. In the simulation the magnetic field is generated through the curl of the electron pressure gradient initiated through the Rayleigh-Taylor instability and evolved due to magnetic diffusion, and advection. The calculation accounts for the magnetic field to determine anisotropic thermal electron and ion conduction as well as effects on the alpha particles in the burn phase. Transport coefficients are calculated using the Epperlein-Haines coefficients with Lee-More degeneracy corrections. Maximum field magnitudes in excess of 30 MG are observed in the simulations. Comparisons for capsule designs with and without perturbations on the CH ablator/DT ice layers and radiation source are performed.

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