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Stopping of Fast Electrons in Dense Hydrogenic Plasmas A. SOLODOV, R. BETTI, Fusion Center for Extreme States of Matter and Fast Ignition Physics, Laboratory for Laser Energetics, U. of Rochester, J. MYATT, Laboratory for Laser Energetics, U. of Rochester — The energy deposition and penetration depth of fast electrons in dense hydrogenic fuel are of great concern in the contexts of fuel preheat of standard ICF targets and heating by relativistic electrons in the fast-ignition scheme. We use the recent theory of electron stopping in hydrogenic plasmas, including scattering effects,[1] to determine the preheating effects on standard ICF targets, the penetration and blooming in fast-ignition fuel, and preheating of the recently proposed shock-ignition scheme.[2] We also test the collisional electron transport model in the hybrid code LSP and compare it with the theoretical results of electron stopping and energy deposition. This work has been supported by the US Department of Energy under Cooperative Agreement ER54789 and DE-FC52-92SF19460.

[1]C. K. Li and R. D. Petrasso, Phys. Rev. E **70**, 067401 (2004).
[2]R. Betti and C. Zhou, "High-Density and High-ρR Fuel Assembly for Fast-Ignition Inertial Confinement Fusion," this conference.

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