Abstract Submitted
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Three-dimensional fast electron transport for ignition-scale inertial fusion targets[1] JAVIER HONRUBIA, Universidad Politecnica, Madrid, Spain, JUERGEN MEYER-TER-VEHN, Max-Planck-Institut fuer Quantenoptik, Garching, Germany — Three-dimensional (3D) hybrid PIC simulations are presented to study electron energy transport and deposition in a full-scale fast ignition configuration. Multi-prong core heating close to ignition is found when a few GA, few PW beam is injected. Resistive beam filamentation in the corona seeds the 3D current pattern that penetrates the core. Ohmic heating is important in the low-density corona, while classical Coulomb deposition heats the core. Here highest energy densities (few Tbar at 10 keV) are observed at densities above 200 g/cm^3. Energy coupling to the core ranges from 20 to 30%; it is enhanced by beam collimation and decreases when raising the beam particle energy from 1.5 to 5.5 MeV.

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J. Javier Honrubia
Universidad Politecnica de Madrid

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