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Hot electron energy coupling in cone-guiding fast ignition BRIAN CHRISMAN, YASUHIKO SENTOKU, University of Nevada, Reno, ANDREAS KEMP, LLNL, THOMAS COWAN, University of Nevada, Reno — The Fast Ignition experiment relies on core ion heating due to laser-plasma interactions. Potential underlying mechanisms for core ion heating include field instabilities, coronal ion wave incidence, and collisional coupling of energetic electrons accelerated from the coronal plasma.Previously demonstrated results show that after preplasma has been swept away, the ultra-intense laser interacts with a steep density gradient, producing low energy hot electrons which are capable of penetrating and interacting with the high density core through collisional processes.Resolving known relevant physics in integrated 2D PIC simulations of a representative Fast Ignition experiment, simulation results are provided detailing the dependence of comprehensive core heating upon laser intensity.

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