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LSP modeling of ultra-intense lasers on cone-coupled wire targets: effect of cone thickness[1] CHRIS ORBAN, VLADIMIR OVICHINNIKOV, KRAMER AKLI, The Ohio State University, Department of Physics, Columbus, OH 43210, USA, ANTHONY LINK, Lawrence Livermore National Laboratory, Livermore, CA 94550, USA, DOUGLASS SCHUMACHER, RICHARD FREEMAN, The Ohio State University, Department of Physics, Columbus, OH 43210, USA — Experiments with ultra-intense laser pulses incident on cone-coupled wire targets can potentially yield valuable information on electron excitation and transport physics relevant to the fast ignition (FI) fusion regime. Using the PIC code LSP, we present fully kinetic simulations with fully consistent laser E & B fields designed to model mm-scale cone-wire experiments conducted with the Titan laser at LLNL. We investigate and explain the strong experimental trend for thicker cones to produce a lower K_α yield. We find that the K_α signal does sensitively depend on the details of the hot electron transport, refluxing and interaction with the cone. Comparison to other recent works and implications for FI are also discussed.

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