

Abstract Submitted
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Energetic proton emission from cone-wire targets interacting with short pulse high intensity laser¹ F.N. BEG, B. PARADKAR, T. YABUCHI, H. SAWADA, UCSD, M.S. WEI, R.B. STEPHENS, GA, S. KRASHENINNIKOV, UCSD — Cone-guided Fast Ignition (FI) relies on successful coupling of laser energy to the dense compressed core through relativistic fast electrons produced at the cone tip. These electrons are extracted for study using Cu wires attached to the cone tip; time integrated fluorescence gives electron temperature and number. However, it does not give detailed dynamics of fast electrons. A recent experiment, carried out at the OMEGA-EP laser shows generation of 18 MeV protons from the Cu wire in radial direction, which facilitate useful information about electron dynamics. The physics of fast electron dynamics, radial field generation and subsequent acceleration of protons has been modeled using hybrid/PIC code LSP. Experimental results along with numerical simulations will be discussed at the meeting.

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