

Abstract Submitted
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Laser absorption and electron propagation in rippled plasma targets CHANDRASEKHAR SHUKLA, AMITA DAS, Institute for plasma research, KARTIK PATEL, Bhabha Atomic Research Centre — Efficient absorption of laser energy and the collimated propagation of relativistic electron beams (generated by the laser target interaction) in plasma are two issues which are of significant importance for applications such as fast ignition scheme of inertial confinement fusion (ICF). It is shown with the help of 2-D Particle-In-Cell simulations that introducing density ripples transverse to the laser propagation direction enhances the efficiency of laser power absorption. Furthermore, the density ripples are also instrumental in suppressing the Weibel instability of the propagating electron beam (which is responsible for the divergence of the beam). A physical understanding of the two effects is also provided.

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