

Abstract Submitted
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Simulations of Ion Acceleration in Thin Dense Gas Jets GEORGE HINE, Univ of Maryland-College Park, FATHOLAH SALEHI, HOWARD MILCHBERG, University of Maryland — We present particle in cell simulations of the interaction of intense femtosecond lasers with thin near-critical density gas jets. 2D simulations show the production of ion beams using as little as 50 mJ of laser energy in a 40 fs laser pulse. The introduction of a transverse density gradient is shown to deflect the laser as well as the accelerated electrons and ions away from the region of high density. 3D simulations show the generation of multi-MeV proton beams in good agreement with the 2D simulations.

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