

Abstract Submitted
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Laser-Driven Ion Beams for Fast Ignition¹ JUAN C. FERNANDEZ, B.J. ALBRIGHT, D.C. GAUTIER, B.M. HEGELICH, C. HUANG, D. JUNG, S. LETZRING, S. PALANIYAPPAN, R. SHAH, L. YIN, H. WU, Los Alamos National Laboratory, J.J. HONRUBIA, Universidad Politecnica de Madrid, M. ROTH, Technical University Darmstadt — We have been developing laser-driven Carbon ion beams for fusion fast ignition (FI). We present our latest understanding on the mechanisms capable of producing the required quasi-monoenergetic C-ion beams with an ion energy of about 0.5 GeV, which is necessary to penetrate to the core of the compressed DT fuel. We discuss how our understanding is informed by the results from our Trident laser experiments, including the geometry of the resulting C beam, its energy spectrum (extending up to 1 GeV), and the plasma conditions where the beam is produced. We present our progress and experimental plans towards achieving the beam parameters required for FI.

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