

Abstract Submitted  
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**Measurements of Ion Stopping around the Bragg Peak and its dependence on electron temperature and density in High-Energy-Density Plasmas (HEDP)** J. FRENJE, C.K. LI, F. SEGUIN, M. GATU JOHNSON, H. SIO, R. PETRASSO, MIT, T. NAGAYAMA, SNL, R. MANCINI, UNR, R. HERNANDEZ, UPGC, P. GRABOWSKI, H.G. RINDERKNECHT, LLNL, V. YU GLEBOV, LLE — Ion stopping around the Bragg peak and its dependence on plasma conditions were recently measured for the first time in HEDP [1]. The data support most stopping-power models for ion velocities ( $v_i$ ) larger than the average velocity of the thermal electrons ( $v_{th}$ ), but there are some differences at  $v_i \sim v_{th}$ , which could not be fully explored. This work described here makes significant advances over the first experimental effort by quantitatively assessing the characteristics of ion stopping around the Bragg peak and its dependence on electron temperature and density in HEDP. This effort represents the first sensitive test of plasma-stopping-power models around the Bragg peak, which is an important first step in our efforts to obtain a fundamental understanding of DT-alpha stopping in HEDP, a prerequisite for understanding ignition margins in various implosion designs. The work was supported by DOE, NLUF, LLNL and LLE. [1] Frenje et al., PRL (2015).

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