Abstract Submitted
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Investigation of the transition between hydrodynamic and kinetic regimes for DT exploding pushers at OMEGA and the NIF[1] R. SIMPSON, N. KABADI, J.A. FRENJE, M. GATU JOHNSON, C.K. LI, F.H. SEGUIN, H. SIO, R.D. PETRASSO, MIT, M. ROSENBERG, R. BETTI, LLE, H. RINDERKNECHT, A. NIKROO, D.T. CASEY, LLNL, T. KWAN, LANL, A. SIMAKOV, LLNL, S. ATZENI, Universita di Roma, C. BELLEI, Centre Laser Intenses et Applications — Previous experiments were conducted to study the transition from hydrodynamic-like to ion kinetic regimes for D^{3}He exploding pushers [1], demonstrating the importance of an ion kinetic approach for formulating more robust predictions of implosion characteristics. This presentation details a series of planned experiments at the OMEGA Facility and the NIF using thin-glass exploding pushers with DT fuel. D and T ions have the same charge, unlike D and ^{3}He, yet their masses are unaltered from the D and ^{3}He case. This allows for the investigation of whether ion-thermal decoupling and species separation are largely a result of charge or mass. [2] The initial gas fill pressure will be varied in order to scan the transition from strongly hydrodynamic to strongly kinetic implosions, while leveraging the expansive diagnostic suite developed at NIF and OMEGA. [1] M. Rosenberg et al., PRL 112, 185001 [2] H. Rinderknecht et.al., PRL 114, 025001

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