

Abstract Submitted
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Revolver Implosion Physics Up Until the Time of Ignition BRETT KEENAN, WILLIAM TAITANO, KIM MOLVIG, Los Alamos Natl Lab — A directly-driven Revolver triple-shell capsule is designed to have two dynamical fuel implosion stages prior to ignition: a shock phase in which the fuel is pre-heated by a spherically converging shock, followed by an adiabatic compression phase in which the fuel is further heated to ignition temperatures. Employing the state-of-the-art, hybrid (kinetic-ion/fluid electron), multi-ion Vlasov-Fokker-Planck code, iFP¹ – as well as semi-analytic predictions from ideal hydrodynamics in spherical geometry – we confirm this two phase picture. Critically, we find that shock kinetic effects and non-ideality are present in the course of the fuel implosion, but these effects do not change the overall dynamics (which is well described by ideal hydrodynamics theory).²

¹J. Comp. Phys., **297** 357 (2015); *ibid.* **318** 391 (2016); *ibid.* **339** 453 (2017); *ibid.* **365** 173 (2018).

²see Phys. Plasmas **27**, 042704 (2020) for details

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