

Abstract Submitted
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Simulations of Ion Beam Heated Targets on NDCX II¹ J.J. BARNARD, A. FRIEDMAN, L.J. PERKINS, LLNL, F.M. BIENIOSEK, M.J. HAY, E. HENESTROZA, B.G. LOGAN, R.M. MORE, P.A. NI, S.F. NG, S.S. YU, LBNL, S.A. VEITZER, Tech-X Corporation — The Neutralized Drift Compression Experiment II (NDCX II) is an induction accelerator now being constructed at LBNL and scheduled for project completion in 2012. The design calls for a $\sim 2 - 3$ MeV, ~ 30 A Li^+ ion beam, delivered in a bunch with sub ns pulse duration, and transverse dimension less than ~ 1 mm. The purpose of NDCX II is to carry out experimental studies of material in the warm dense matter regime and ion beam and hydrodynamic coupling experiments relevant to heavy ion fusion (HIF). In preparation for NDCX-II, we have carried out hydro simulations of ion-beam-heated, porous and solid, metallic and non-metallic, targets. We have shown the sensitivity of observables on equations of state. Pulse formats include single pulses of fixed ion energy, and single or double pulses with variable energy to create shocks and investigate ion-coupling efficiency. Comparisons are made with simulations of ion driven direct drive HIF capsules.

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