

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

High pressure, quasi-isentropic drive designs for material dynamics experiments on the NIF¹ S.T. PRISBREY, B.A. REMINGTON, H.-S. PARK, M.J. MAY, R.M. CAVALLO, S.M. POLLAINÉ, Lawrence Livermore National Laboratory — We have developed a series of novel designs for reaching high pressures in planar samples along a quasi-isentropic loading path, based on a “plasma drive” concept. The goal is to be able to study fundamental material properties and material dynamics in the solid state at very high pressures and strain rates. These designs use a target layering approach for generating the required pulse shaping to keep the samples under study at low temperatures, well below the melt temperature. The critical design components and criteria will be discussed, as will tests of aspects of these drive designs done with experiments at the Omega laser.

¹This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344. LLNL-ABS-442831.

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Date submitted: 23 Jul 2010

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