Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

HybridE design, status, and look ahead ANDREA KRITCHER, ALEX ZYLSTRA, RICCARDO TOMMASINI, DAN CASEY, SEBASTIEN LE PAPE, DENISE HINKEL, CHRIS WEBER, DAN CLARK, DAVE STROZZI, MATT BRUHN, MATTHIAS HOHENBERGER, KEVIN BAKER, JOE RALPH, TILO DOEPPNER, JOHN EDWARDS, DEBBIE CALLAHAN, OMAR HURRICANE, Lawrence Livermore National Laboratory — Inertial Confinement Fusion (ICF) implosion performance has been shown to be sensitive to implosion velocity, adiabat, inflight ablation pressure, and capsule size [1]. Recently the hybridB campaign has fielded the largest high-density carbon (HDC or diamond) ablator implosions at NIF while maintaining symmetry using an experimental database to inform hohlraum design choices [2]. HybridE further increases the implosion velocity beyond hybridE and capsule scale (by +5% compared to hybridB) in a smaller hohlraum that reaches higher radiation temperatures. Time-dependent drive symmetry is controlled using cross beam energy transfer (CBET) between laser beams in low gas filled hohlraums (0.3 mg/cc He) with high laser coupling (low backscatter). This talk outlies the hybridE design, preliminary comparisons to experimental data (including symmetry experiments and layered DT implosions), and look ahead to future hybridE experiments. This work was performed under the auspices of the U.S. Department of Energy by LLNS, LLC, under Contract No. DE-AC52- 07NA27344. LLNL-ABS-780157 [1] O A Hurricane *et al*, Plasma Phys. Control. Fusion **61,** 014033 (2019). [2] D. A. Callahan *et al,* Physics of Plasmas **25**, 056305 (2018).

Andrea Kritcher
Lawrence Livermore National Laboratory

Date submitted: 03 Jul 2019 Electronic form version 1.4