Abstract Submitted
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BigFoot: a program to reduce risk for indirect drive laser fusion CLIFF THOMAS, Lawrence Livermore Natl Lab — The conventional approach to inertial confinement fusion (ICF) with indirect drive is to design for high convergence (40), DT areal density, and target gain. By construction, this strategy is challenged by low-mode control of the implosion (Legendre P2 and P4), instability, and difficulties interpreting data. Here we consider an alternative - an approach to ICF that emphasizes control. To begin, we optimize for hohlraum predictability, and coupling to the capsule. Rather than focus on density, we work on making a high-energy hotspot we can diagnose and "tune" at low convergence (20). Though gain is reduced, this makes it possible to study (and improve) stagnation physics in a regime relevant to ignition (1E16-1E17). Further improvements can then be made with small, incremental increases in areal density, target scale, etc. Details regarding the "BigFoot" platform and pulse are reported, including recent findings. Work that could enable additional improvements in capsule stability and hohlraum control will also be discussed. This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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