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Effect of Symmetry on Performance of Imploding Capsules using the Big Foot Design SHAHAB KHAN, DANIEL CASEY, KEVIN BAKER, CLIFF THOMAS, RYAN NORA, BRIAN SPEARS, LAURA BENEDETTI, NOBUHIKO IZUMI, TAMMY MA, SABRINA NAGEL, ARTHUR PAK, Lawrence Livermore Natl Lab, NATIONAL IGNITION FACILITY COLLABORATION — At the National Ignition Facility, several simultaneous designs are investigated for optimizing Inertial Confinement Fusion (ICF) energy gain of indirectly driven imploding fuel capsules. Relatively high neutron yield has been achieved while exhibiting a non-symmetric central core and/or shell. While developing the "Big Foot" design, several tuning steps were undertaken to minimize the asymmetry of both the central hot core as well as the shell. Surrogate capsules (symcaps) were utilized in the 2-D Radiography platform to assess both the shell and central core symmetry. The results of the tuning experiments are presented. In addition, a comparison of performance and shape metrics demonstrates that improving symmetry of the implosion can yield better performance. This 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-683471

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