Abstract Submitted
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Implosion experiments using $D_2\backslash{}^3He$ filled glass capsules doped with noble gases: A Study.[1] JOHN BENAGE, GEORGE KYRALA, DOUG WILSON, MARK GUNDERSON, HANNA MAKARUK, Los Alamos National Lab, JOHANN FRENJE, C.K. LI, RICHARD PETRASSO, MIT, BARUCH YAAKOBI, LLE, WARREN GARBETT, AWE — When simulations are unable to match the yield in ICF implosion experiments, "mix" is commonly used to fix the simulation. If this fix is in any way assumed to model reality, then we are assuming that the simulations calculate the effect of the mix on the implosion and yield correctly. To study whether this assumption is valid, we have done a series of experiments that purposely add a fixed amount of mix of varying atomic number and density. The experiments are very well characterized, measuring the proton and neutron yields, the ion and electron temperatures, the ρR and radius of the capsule, the radiation emission, and the x-ray spectra from the capsule. We find that,in general, the calculations have great difficulty matching this data. A summary of the measurements for various dopants and dopant levels and how well the calculations compare will be presented. Some possible reasons for the modeling difficulties will be discussed along with some preliminary efforts to address these problems.

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