Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

The Measurable Effects of Germanium Loaded into the Pusher of a Pushered Single Shell Capsule Designed for the National Ignition Facility[1] ROBERT TIPTON, KEVIN BAKER, DANIEL CASEY, EDUARD DEWALD, FRANK GRAZIANI, STEVE MACLAREN, ABASS NIKROO, JESSE PINO, JOE RALPH, BRUCE REMINGTON, RYAN SACKS, JAY SALMONSON, VLADIMIR SMALYUK, LLNL — Germanium loaded pushered single shells (PSS) have been designed as a vehicle to study the effects of turbulent mixing between the DT fuel and a pusher which is not fully ionized. This is intended as a surrogate for the high-Z mixing expected in future double-shell ignition capsules [1]. These PSS experiments will be diagnosed by loading deuterium along with the germanium into the GDP pusher and filling the capsule with a mixture of tritium and hydrogen. In such CD mix experiments, the measured number of DT neutrons along with the inferred ion temperature from the time-of-flight thermal broadening provides detailed information about the annular mixing of the fuel and the pusher. This paper will compare the expected DT mix signals from capsules loaded with germanium to control capsules fired without any germanium. Leading turbulent mix models predict the germanium loaded capsules and no-germanium control capsules will produce significantly different results. [1] See Ryan Sacks "Pushered single shell capsule design for the study of high Z mix on the National Ignition Facility" this conference.

[1]This work was performed under the auspices of the U.S. Department of Energy by LLNL under contract DE-AC52-07NA27344,LLNS, LLC.

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Date submitted: 15 Jul 2016 Electronic form version 1.4