place this abstract near those of my other colleagues from:
Magneto-Inertial Fusion, University of Nevada, Reno, and University of California, San Diego,
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Abstract Submitted
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Staged Z-pinch Experiments on the NTF Zebra Facility[1] FABIO CONTI, University of California, San Diego, A. ANDERSON, T. W. DARLING, E. DUTRA, University of Nevada, Reno, V. GLEBOV, University of Rochester, M. P. ROSS, UCSD, E. RUSKOV, MIFTI, J. C. VALENZUELA, UCSD, F. J. WESSEL, MIFTI, F. BEG, UCSD, A. COVINGTON, UNR, J. NARKIS, UCSD, H. U. RAHMAN, MIFTI — We report results from the latest Staged Z-pinch[2] experiments conducted on the 1 MA, 100 ns Zebra facility at the University of Nevada, Reno. In these experiments, a high-Z annular gas liner (Ar, Kr) with initial radius of 1.2 cm implodes onto a deuterium target on axis. Measurements are presented, including data from pinch current, X-ray photodiodes and PCDs signals, visible streak imaging, XUV gated imaging, laser shadowgraphy, neutron time-of-flight and neutron yield detectors, and preliminary data analysis is discussed. The implosion velocity exceeding 300 km/s, and pinch time are consistent with MHD simulations performed with the MACH2 code. The imaging diagnostics indicates that the target column is more stable than the surrounding liner during the implosion. Primary (DD) neutrons of thermonuclear nature were produced with yields higher than $1x10^9$ per shot, reproducibly. In addition, preliminary neutron time-of-flight results indicate that secondary (DT) neutrons can be produced above the detection threshold.

[1]Funded by the Advanced Research Projects Agency - Energy, grant DE-AR0000569.
[2]H. U. Rahman, F. J. Wessel, and N. Rostoker, Staged Z Pinch, Phys. Rev. Lett. 74, 714 (1995)

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