Abstract Submitted
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Z-pinch experiments on the UCSD LTD generator.[1] FABIO CONTI, NICHOLAS AYBAR, VLADIMIR FADEEV, APSARA WILLIAMS, GILBERT COLLINS IV, JEFFREY NARKIS, University of California, San Diego, EMIL RUSKOV, HAFIZ RAHMAN, Magneto-Inertial Fusion Technologies Inc., RICK SPIELMAN, Idaho State University, PIERRE GOURDAIN, University of Rochester, DAVID REISMAN, None, FARHAT BEG, University of California, San Diego — Linear Transformer Drivers (LTDs) are based on the state of the art pulsed power generator technology, featuring small footprint, high energy coupling to high energy density loads, low inductance, multi-stage modularity, and potentially high repetition rate [1]. A LTD generator capable of producing up to 1 MA in 150 ns has recently been assembled at UCSD based on a prototype from Sandia National Laboratories [2]. We present the first results from Z-pinch experiments conducted on this machine in both wire arrays and gas puff configurations. The experimental data include machine performance diagnostics, such as monitors for all the spark gap switches and load current probes, and plasma diagnostics such as XUV time-gated and time-integrated images, filtered X-ray photodetectors, time-gated and time-integrated spectroscopy, and laser probing.

1. R. D. McBride et al., IEEE Trans. Plasma Sci. 46, 3928 (2018)

2. J. R. Woodworth et al., Phys. Rev. ST Accel. Beams 14, 040401 (2011)

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