

Abstract Submitted
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First Experiments with Planar Wire Arrays on U Michigan's Linear Transformer Driver¹ A.S. SAFRONOVA, V.L. KANTSYREV, M.E. WELLER, I.K. SHRESTHA, V.V. SHLYAPTSEVA, M.C. COOPER, M. LORANCE, A. STAFFORD, University of Nevada, Reno, NV 89557, S.G. PATEL, A.M. STEINER, D.A. YAGER-ELORRIAGA, N.M. JORDAN, R.M. GILGENBACH, The University of Michigan, Ann Arbor, MI 48109 — For petawatt-class Z-pinch accelerators, a Linear Transformer Driver (LTD)-driven accelerator promises to be (at a given pinch current and implosion time) more efficient than the conventionally used Marx-driven accelerator. Because there exists almost no data on how wire arrays radiate on LTD-based machines in the USA, it is very important to perform radiation and plasma physics studies on this new type of generator. We report on the first outcome of the new partnership with University of Michigan (UM), which resulted in successful UNR-UM experiments on the low-impedance MAIZE generator with planar wire arrays (PWA). PWA is a novel wire array load that was introduced and tested in detail on high-impedance Zebra at UNR during the last years and found to be the most efficient radiator. Implosion of Al Double PWAs of different configurations were achieved on MAIZE, observed with a set of various diagnostics which include x-ray diode detectors, x-ray spectroscopy and imaging, and shadowgraphy. Al and Mg plasmas of more than 450 eV were studied in detail.

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