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Implosion dynamics and radiative properties of W planar wire arrays influenced by Al wires on University of Michigan's LTD generator.<sup>1</sup> A.S. SAFRONOVA, V.L. KANTSYREV, V.V. SHLYAPTSEVA, I.K. SHRESTHA, C.J. BUTCHER, A. STAFFORD, University of Nevada, Reno, P.C. CAMPBELL, S. MILLER, D.A. YAGER-ELORRIAGA, N.M. JORDAN, R.D. MCBRIDE, R.M. GILGENBACH, University of Michigan — The results of new experiments with W Double Planar Wire Arrays (DPWA) at the University of Michigan's Linear Transformer Driver (LTD) generator are presented that are of particular importance for future work with wire arrays on 40-60 MA LTDs at SNL. A diagnostic set similar to the previous campaigns comprised filtered x-ray diodes, a Faraday cup, x-ray spectrometers and pinhole cameras, but had an ultra-fast 12-frame self-emission imaging system. Implosion and radiative characteristics of two DPWAs of the same mass (60  $\mu$ g/cm) and geometry (two planes with 8 wires each at the distance of 6 mm and an inter-wire gap of 0.7 mm) with one plane of W wires and another either of W wires (1) or of Al wires (2) were compared in detail. The substantial differences between two cases are observed: 1) precursor formation and intense hard x-ray characteristic emission of W ("cold" L lines) caused by electron beams; 2) no precursor, standing shocks at the W plane side that lasted up to a hundred of ns, fast ablation and implosion of Al wires, and suppression of hard x-ray "cold" L lines of W. In addition, the evolution of self-emission in a broad period of time up to 400 ns is analyzed for the first time.

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