

Abstract Submitted  
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**Investigation of implosions in star-like wire arrays on the 1-MA Zebra generator** V.V. IVANOV, V.I. SOTNIKOV, A. HABOUB, A.L. ASTANOVITSKIY, A. MOROZOV, S.D. ALTEMARA, C. THOMAS, S. BATIE, V. NALAJALA, University of Nevada, Reno, A.P. SHEVELKO, E.D. KAZAKOV, P.N. Lebedev Physical Institute, Moscow — Implosions in star-like wire arrays, consisting of multiple rays of linear wire rows extending from the central axis, were investigated in the 1-MA Zebra generator. Arrays with 12-24 wires placed on 3-8 rays and 3-6 cylinders were tested. In star-like arrays the imploding plasma cascades to the center from wire to wire along rays of the star and forms plasma columns with a smooth leading edge. Shadowgraphy shows improved plasma homogeneity and mitigation of instabilities. Despite the low azimuthal symmetry, star-like wire arrays produce a stable x-ray pulse with the enhanced peak power of 0.4 TW and the shortest duration of 8-12-ns among other loads in this series of shots. Dynamics of the implosion in star-like wire arrays are compared with cylindrical and nested arrays. Work was supported by the DOE/NNSA under UNR grant DE-FC52-06NA27616.

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