

Abstract Submitted  
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**Study of Bright Spots in Wire-Array Z-Pinches**<sup>1</sup> V.V. IVANOV, D. PAPP, A.A. ANDERSON, B. TALBOT, A.L. ASTANOVITSKIY, V. NALAJALA, O. DMITRIEV, University of Nevada, Reno, US, J.P. CHITTENDEN, N. NIASSE, Imperial College, London, UK — Bright areas with a high plasma density and temperature (hot spots) were observed in all kinds of Z-pinches. Hot spots may be interpreted as results of the collapse of the plasma necks due to plasma outflowing and radiative losses of energy. We studied bright radiating spots in cylindrical and planar wire-arrays at the 1 MA Zebra generator using x-ray streak cameras synchronized with laser diagnostics, x-ray time-gated pinhole camera and spectroscopy. Hot spots in Al wire arrays generate x-ray bursts with durations of 0.4-1ns in the soft range and 0.1-0.4ns in the keV range. UV two-frame shadowgraphy shows spatial correlation of hot spots with micropinches. Hot spots can generate continuum radiation with energy  $>2.5\text{keV}$ . An analysis of x-ray streak images shows that hot spots can generate  $>20\%$  of the x-ray energy of the Z pinches.

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