Abstract Submitted
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Advances in experimental spectroscopy of Z-pinch plasmas and applications[1] V.L. KANTSYREV, A.S. SAFRONOVA, U.I. SAFRONOVA, I. SHRESTHA, M.E. WELLER, G.C. OSBORNE, V.V. SHLYAPTSEVA, P.G. WILCOX, A. STAFFORD, University of Nevada, Reno — Recent advances in experimental work on plasma spectroscopy of Z-pinches are presented. The results of experiments on the 1.7 MA Z-pinch Zebra generator at UNR with wire arrays of various configurations and X-pinches are overviewed. A full x-ray and EUV diagnostic set for detailed spatial and temporal monitoring of such plasmas together with theoretical support from relativistic atomic structure and non-LTE kinetic codes used in the analysis are discussed. The use of a variety of wire materials in a broad range from Al to W provided an excellent opportunity to observe and study specific atomic and plasma spectroscopy features. In addition, the applications of such features to fusion and astrophysics will be considered.

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V.L. Kantsyrev
University of Nevada, Reno

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