

Abstract Submitted
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Dependence of z-pinch mass ablation rate on wire size and inter-wire gap¹ EDMUND YU, Sandia National Labs, BRYAN OLIVER, Mission Research Corporation, Albuquerque, NM, PAVEL SASOROV, Institute of Theoretical and Experimental Physics, Moscow, DAN SINARS, MIKE CUNEO, TOM MEHLHORN, Sandia National Labs — A wire array z-pinch spends 60-80% of its lifetime in a mass ablation phase, during which wire cores remain stationary while burning off hot coronal material. Experiments have demonstrated a dependence of the mass ablation rate on wire size and inter-wire gap [1,2]. We present a highly simplified model of wire ablation which attempts to capture the dominant physics driving this dependence. Comparison between theory, simulation, and experiment are presented.

[1] S.V. Lebedev et al., Nucl. Fusion, 44, S215(2004)

[2] D.B. Sinars et al., (submitted for publication)

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