Abstract Submitted
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Design Studies of Magneto-Rayleigh-Taylor Instabilities on Thin Foils[1] JACOB ZIER, MATTHEW GOMEZ, YUE YING LAU, RONALD GILGENBACH, WILKIN TANG, DAVID FRENCH, University of Michigan, MICHAEL CUNEO, Sandia National Laboratories, JOHN LUGINSLAND, NumerEx — Thin foils are not widely used as z-pinch loads currently. However, they might be necessary to achieve the required mass for higher current x-ray sources, and they also offer useful options for x-ray pulse shaping [1]. This paper reports a preliminary design study on the dominant instability, the magneto-Rayleigh-Taylor instability (MRTI). Planar Al foils 400 nm thick will be used, driven by the 1-MA linear transformer driver (LTD), MAIZE, at U of Michigan. Inductance considerations and a planar foil load design are presented along with MRTI theory. Laser diagnostic images of 400 nm Al foil shots on the (U of M) MZP4 accelerator are also presented. [1] T.J. Nash, C. Deeney, G.A. Chandler *et a.l*, Phys. Plasmas 11, L65 (2004).

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