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A Theoretical Study of Anisotropy in the magneto-Rayleigh-Taylor Instability (MRT) on a Thin Foil[1] Y.Y. LAU, J.C. ZIER, I.M. RITTERSDORF, R.M. GILGENBACH, S.G. PATEL, A.M. STEINER, M.R. GOMEZ, University of Michigan, M.E. CUNEO, S. SLUTZ, Sandia National Labs, A.L. VELIKOVICH, D. COLOMBANT, Naval Research Lab — MRT on foils is expected to be different from the conventional Rayleigh-Taylor instability by the presence of the unidirectional current that drives MRT. In one configuration, two return-current plates on opposite sides of the foil are used to accelerate the foil. The MRT growth can then be controlled by the foil's initial position. However, the effects of the magnetic field on either side of the foil will be different, and time-varying. We have used a simple MHD model to analyze this configuration. Issues such as anisotropy and feedthrough are studied, thus illustrating the differences and similarities on Rayleigh-Taylor growth driven by magnetic pressure and by gas pressure.

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Jacob Zier
University of Michigan

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