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Design of a flux compression experiment on Atlas V. MAKHIN, B.S. BAUER, T.J. AWE, S. FUELLING, T. GOODRICH, I.R. LINDEMUTH, R.E. SIEMON, University of Nevada, Reno, W.L. ATCHISON, R.J. FAEHL, R.E. REINOVSKY, D.W. SCUDDER, P.J. TURCHI, Los Alamos National Laboratory
— A possible plasma target for Magnetized Target Fusion is a stable diffuse z pinch like that of the MAGO experiments at VNIIEF. In this case plasma would reside in a toroidal cavity, eg., between two cylindrical walls with end planes. Compressing magnetic flux inside a chamber of that geometry is the purpose of the Atlas experiment. The outer wall or "liner" will be an aluminum cylinder $\sim$ 2-mm thick that is imploded by Atlas current flowing from the end walls ("glide planes") to the outside of the liner. Flux for compression will be introduced by momentarily diverting a small amount of Atlas current using a shunt resistor, which avoids the cost and complexity of an auxiliary power supply. Modeling of experimental parameters will be described based on results from three codes: a) a semi-analytic ode incompressible liner model, b) the Los Alamos RAVEN 1D Lagrangian code, and c) the Los Alamos 1D or 2D MHRDR Eulerian code.

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