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Code Verification of Magnetized Cylindrical Liner Implosions MARK HESS, Sandia National Laboratories, MATTHEW WEIS, University of Michigan, Sandia National Laboratories, MATTHEW MARTIN, ADAM SEFKOW, CHARLES NAKHLEH, Sandia National Laboratories, Y.Y. LAU, University of Michigan — We investigate the physics of magnetized cylindrical liner implosions with existing MHD codes to verify code accuracy, as well as to understand parametric behavior on figures-of-merit, e.g. radial liner velocity, for designing experiments. In our problem, we assume that there exists a 1-D metallic cylindrical liner with an initial axial magnetic seed field imposed in the system. The liner radially implodes due to a specified drive current while the effects of liner pressure and magnetic seed field compression oppose the implosion. This problem is of importance for future magnetized liner fusion experiments, e.g. MagLIF [1].

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[1] S.A. Slutz et al, Phys. Plasmas 17, 056303 (2010).

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