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**Flyer-Plate-Based Current Diagnostic for Magnetized Liner Inertial Fusion Experiments** JOSEPH RENEKER, MATTHEW GOMEZ, MARK HESS, CHRISTOPHER JENNINGS, Sandia National Laboratories — Accurate measurements of the current delivered to Magnetized Liner Inertial Fusion (MagLIF) [1] loads on the Z machine are important for understanding the dynamics of liner implosions. Difficulty acquiring a reliable load current measurement with the standard Z load B-dots [2] has spurred the development of alternative load current diagnostics. Velocimetry of an electromagnetically-accelerated flyer plate can be used to infer the drive current on a flyer surface. A load current diagnostic design is proposed using a cylindrical flyer plate in series with the MagLIF target. Aspects of the flyer plate design were optimized using magnetohydrodynamic simulations. Design and preliminary results will be presented. Sandia National Laboratories is a multiprogram laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

[1] S.A. Slutz et al, Phys. Plasmas 17, 056303 (2010)
[2] D. V. Rose et. al., Phys. Rev. ST Accel. Beams, 13, 040401 (2010)

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