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Laser-only experiments in support of the MagLIF scheme¹ ADAM HARVEY-THOMPSON, STEPHEN SLUTZ, ADAM SEFKOW, DAVID BLISS, MATTHIAS GEISSEL, MATTHEW GOMEZ, ERIC HARDING, DANIEL SINARS, IAN SMITH, Sandia National Laboratories, GENNADY FIKSEL, Laboratory for Laser Energetics, MINGSHENG WEI, General Atomics — The MagLIF inertial confinement fusion scheme involves imploding a cylindrical liner with the 24 MA, 100 ns rise-time current pulse delivered by the Z generator which compresses a D2 fuel that is magnetized with an external magnetic field and preheated with an energy source — currently the 2.5 kJ Z-Beamlet laser. For this scheme to be successful, laser energy has to be coupled effectively into the fuel and electron thermal conduction needs to be suppressed by the applied magnetic field. Laser only experiments at ZBL and Omega EP can potentially test these aspects of the scheme, exploring the physics and aiding target design. Completed and planned experiments are discussed.

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