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Measurements of fusion neutrons from Magnetized Liner Inertial Fusion Experiments on the Z accelerator[1] K.D. HAHN, G.A. CHANDLER, C.L. RUIZ, M.R. GOMEZ, S.A. SLUTZ, A.B. SEFKOW, D.B. SINARS, S.B. HANSEN, P.F. KNAPP, P.F. SCHMIT, E.C. HARDING, T.J. AWE, J.A. TORRES, B. JONES, J.A. BUR, Sandia National Laboratories, G.W. COOPER, J.D. STYRON, Univ. New Mexico, V.YU. GLEBOV, Univ. Rochester, LLE — Strong evidence of thermonuclear neutron production has been observed during Magnetized Liner Inertial Fusion (MagLIF) experiments on the Z accelerator. So far, these experiments have utilized deuterium fuel and produced primary DD fusion neutron yields up to 2e12 with electron and ion stagnation temperatures in the 2-3 keV range. We present MagLIF neutron measurements and compare to other data and implosion simulations. In addition to primary DD and secondary DT yields and ion temperatures, other complex physics regarding the degree of fuel magnetization and liner density are elucidated by the neutron measurements. Neutron diagnostic development for deuterium and future deuterium-tritium fuel experiments are also discussed.

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