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Diagnosing Magnetized Liner Inertial Fusion experiments on Z[1]

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Recent Magnetized Liner Inertial Fusion (MagLIF) experiments performed at Sandia's Z facility have demonstrated DD fusion neutron yields above 10^{12} and effective confinement of charged fusion products by the flux-compressed magnetic field signaled by $>10^{10}$ secondary DT neutrons. The neutron diagnostics are complemented by an extensive suite of visible and x-ray diagnostics providing power, imaging, and spectroscopic data. This talk will present analyses of emission and absorption features from the imploding and stagnating plasma that provide a consistent picture of the magnetic drive and the temperatures, densities, mix, and gradients in the fuel and liner at stagnation.

[1]Sandia is a multi-program laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy under contract DE-AC04-94AL85000.