Abstract Submitted
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Experiments for guiding the electron beams in the laser target using MG magnetic fields[1] NOAH HUERTA, VLADIMIR IVANOV, ALEXEY ASTANOVITSKIY, University of Nevada, Reno, ZEBRA PULSED POWER LAB TEAM — Collimation of fast electrons in the laser targets by strong magnetic fields will be studied at the University of Nevada, Reno. Studies such as fast ignition concept for inertially confined fusion and medical applications would benefit from a better understanding of guiding fast electrons. Coherent transition radiation (CTR) diagnostic indicates the collimation of fast electrons by strong external magnetic fields. CTR is generated during the pass of electrons through the target on the rear side. The 1 MA Zebra pulsed power machine coupled with a 50 TW laser will be used to conduct such experiments. CTR will be generated on the backside of Si and CH targets at laser intensity of (0.3-1)x10^{19} W/cm^2. Collimation of fast electrons will be monitored by CTR on the laser target. Targets will be placed in the axial magnetic field generated in coil loads by the Zebra pulsed power machine. The Zebra machine produces the longitudinal magnetic field of 1-1.5 MG. Initial laser experiments with CTR diagnostics will be presented.

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