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Characterization of Fast-Electron Beam Propagation Through Solid-Density Matter by Optical Transition Radiation M. STORM, J. MYATT, C. STOECKL, Laboratory for Laser Energetics, U. of Rochester — A diagnostic has been developed to measure the emission of optical transition radiation (OTR) produced by relativistic electrons emerging at the rear side of laser-illuminated targets. The device will be deployed in the newly completed multiterawatt (MTW) experimental facility at the University of Rochester's Laboratory for Laser Energetics. The MTW laser is capable of producing 10-J, 600-fs pulses of 1053-nm-wavelength radiation, which are focused using an $f/2$ off-axis parabolic mirror to intensities in excess of 10^{19} Wcm^{-2}. A 20$\times$ microscope objective with a resolution of better than 1 μm will image the OTR signal onto a CCD camera. A postprocessor to the particle-in-cell code *LSP* will be used to generate a simulated OTR signal from the calculated fast-electron distributions at the rear side of the target for comparison with experimental data. This talk will present the characteristics and capabilities of the OTR device along with the most recently acquired data. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-92SF19460.

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