

Abstract Submitted  
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**Operating Neutron Diagnostics in a High-Intensity Laser Environment** V.YU. GLEBOV, C. STOECKL, T.C. SANGSTER, M. CRUZ, T. DUFFY, S. ROBERTS, Laboratory for Laser Energetics, U. of Rochester — The OMEGA Extended Performance (EP) Laser System was completed in April 2008 as a significant enhancement of the 60-beam, 30-kJ OMEGA Laser Facility at the University of Rochester's Laboratory for Laser Energetics. OMEGA EP is designed to deliver two high-energy petawatt laser beams into the OMEGA target chamber for backlighting and integrated fast-ignitor experiments. The high-intensity laser beams produce a large amount of hard x rays and an electromagnetic pulse (EMP) background that makes operating the neutron diagnostics very challenging. This talk will describe operating the OMEGA neutron diagnostics in a high-intensity laser environment, including neutron temporal diagnostics, neutron bang time detectors, and neutron time-of-flight diagnostics. Development of a new neutron diagnostic specially designed for a high-intensity laser environment will be also presented. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

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