

Abstract Submitted
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First Measurements of Neutron Spectra using the Magnetic Recoil Spectrometer (MRS) at OMEGA J.A. FRENJE, D. CASEY, C.K. LI, J. RYGG, F.H. SEGUIN, R.D. PETRASSO, MIT PSFC, V.YU. GLEBOV, D.D. MEYERHOFER, T.C. SANGSTER, UR LLE, K. FLETCHER, SUNY GENESSEO — A new type of neutron spectrometer, a Magnetic Recoil Spectrometer (MRS), is being implemented at OMEGA for measurements of the scattered-DT-neutron spectrum, from which ρR can be inferred. Implementing an MRS at OMEGA is important for several reasons. First, it allows comprehensive tests of the different MRS parameters. Second, ρR of cryogenic DT implosions can be inferred from both the MRS and charged-particle spectrometry for moderate ρR implosions ($\rho R < 200$ mg/cm²); this allows for a definitive check of the MRS. Third, as there is no other way to determine ρR when it exceeds 200 mg/cm², the MRS will bring a required diagnostic to the OMEGA cryogenic program. Fourth, the experience with MRS implementation and resulting neutron data at OMEGA will enable us to implement an optimal MRS for the NIF. The results from the first MRS measurements performed at OMEGA are presented. This work was supported in part by the U.S. DOE (Grant No. DE-FG03-03SF22691), LLE (subcontract Grant No. 412160-001G), LLNL (subcontract Grant No. B504974).

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