

Abstract Submitted
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Measurements of down-scattered and TT-neutron spectra using the Magnetic Recoil Spectrometer (MRS) on OMEGA D. CASEY, J. FRENJE, F. SEGUIN, C. LI, M. MANUEL, N. SINENIAN, R. PETRASSO, MIT, V. GLEBOV, P. RADHA, T. SANGSTER, D. MEYERHOFER, LLE, D. MCNABB, A. MILES, P. NAVRATIL, S. QUAGLIONI, LLNL, J. KILKENNY, A. NIKROO, GA — The down-scattered and TT-neutron spectra from an ICF implosion have been measured for the first time using the Magnetic Recoil Spectrometer (MRS) at OMEGA. From the measurements of the down-scattered neutron spectrum, an areal density was inferred for both CH and low-adiabat cryogenic DT implosions. From the TT-neutron measurements, the astrophysical S-factor (“cross section”) and the branching ratio for the different TT-reaction channels were determined at energies inaccessible by conventional accelerator techniques. These measurements are unique because the ICF implosions produce weakly coupled, low-density plasmas in which electron screening has no impact on the S-factor. In this poster, the results from these measurements will be presented. This work was supported in part by the U.S. DOE, LLE and LLNL.

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