

Abstract Submitted
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A Streak-Camera based Magnetic Recoil Spectrometer (SCMRS) for measurements of $T_i(t)$, $Y_n(t)$, $d_{sr}(t)$ at OMEGA and the NIF J. FRENJE, D. CASEY, M. GATU-JOHNSON, C. LI, F. SEGUIN, R. PETRASSO, MIT, R. BIONTA, J. EDWARDS, S. GLENZER, O. LANDEN, A. MACKINNON, D. MUNRO, P. SPRINGER, LLNL, J. KILKENNY, GA, V. GLEBOV, T. SANGSTER, C. STOECKL, LLE — A Streak-Camera based Magnetic Recoil Spectrometer (SCMRS) for time-resolved, high-resolution measurements of the neutron spectrum is proposed. This is the next-generation neutron spectrometry that has the potential to probe the time evolution of T_i , fuel ρR , burn history, bang time and kinetic effects. Having time-revolved information about these implosion parameters will be essential for better understanding the issues with the assembly of the hotspot and main fuel. The technique, which is an extension of the MRS technique successfully used on both OMEGA and the NIF, utilizes a combination of a magnetic field and a streak camera to break the dispersion issue for detailed measurements of the neutron spectrum with a time resolution of ~ 20 ps. It is anticipated that SCMRS should work for neutron yields above $\sim 10^{13}$ and $\sim 5 \times 10^{14}$ on OMEGA and the NIF, respectively. This work was supported in part by the U.S. DOE, LLNL and LLE.

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