

Abstract Submitted
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Time-resolved electron temperatures of Inertial Confinement Fusion experiments at the National Ignition Facility¹ SHAHAB KHAN, PRAVESH PATEL, LAURENT DIVOL, EDWARD HARTOUNI, ANDREW MACPHEE, ALEX ZYLSTRA, ARTHUR PAK, OTTO LANDEN, Lawrence Livermore Natl Lab — The electron temperature (T_e) of the hot spot within the core of imploded inertial confinement fusion capsules is an effective indicator of implosion performance. An x-ray streak camera at the National Ignition Facility uses thick Titanium filters to sample x-rays from specific energy regions. The time resolved signal from each filter is used in a forward fit algorithm with a hot spot emission model to generate T_e as a function of time. This is a complex problem because the instrument impulse response through each filter is distinct. In addition, the algorithm must distinguish emission from the hot spot from that from ablator material. Herein, the strategies in solving this problem is discussed. Preliminary T_e results and their correlation with other performance metrics are presented. This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344. LLNL-ABS-811772

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