Abstract Submitted
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Design of Initial Opacity Platform at the National Ignition Facility[1] R.F. HEETER, M.F. AHMED, S.L. AYERS, J.A. EMIG, C.A. IGLESIAS, D.A. LIEDAHL, M.B. SCHNEIDER, B.G. WILSON, Lawrence Livermore National Lab, E.J. HUFFMAN, J.A. KING, Y.P. OPACHICH, P.W. ROSS, National Security Technologies, J.E. BAILEY, G.A. ROCHAU, Sandia National Lab, R.S. CRAXTON, E.M. GARCIA, P.W. MCKENTY, R. ZHANG, Univ. of Rochester Laboratory for Laser Energetics, T. CARDENAS, B.G. DEVOLDER, E.S. DODD, J.L. KLINE, M.E. SHERRILL, T.S. PERRY, Los Alamos National Lab — The absorption and re-emission of x-rays by partly stripped ions plays a critical role in stars and in many laboratory plasmas. A NIF Opacity Platform has been designed to resolve a persistent disagreement between theory and experiments on the Sandia Z facility, studying iron in conditions closely related to the solar radiation-convection transition boundary. A laser heated hohlraum "oven" will produce iron plasmas at temperatures >150 eV and electron densities $\geq 7\text{x}10^{21}/\text{cm}^3$, and be probed with continuum X-rays from a capsule implosion backlighter source. The resulting X-ray transmission spectra will be recorded on a specially designed Opacity Spectrometer.

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Robert Heeter
Lawrence Livermore National Lab

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