

Abstract Submitted
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Probing the Strength of Nuclear-Plasma Interactions at the National Ignition Facility¹ A. RATKIEWICZ, L. BERZAK HOPKINS, D.L. BLEUEL, W.S. CASSATA, R. LONDON, C.A. VELSKO, C.B. YEAMANS, Lawrence Livermore National Laboratory, L.A. BERNSTEIN, K. VAN BIBBER, B.L. GOLDBLUM, University of California, Berkeley, S. SIEM, University of Oslo, M. WEIDEKING, iThemba LABS — Electron-mediated interactions between nuclei and plasma are expected to affect nuclear reaction cross sections in High Energy Density Plasmas (HEDPs), which are the environment in which stellar nucleosynthesis occurs. However, attempts to measure the strength of these Nuclear Plasma Interactions (NPIs) have been hindered by the extreme narrowness of the nuclear transition ($\Gamma \leq 1 \mu\text{eV}$). We report on the planned effort to measure the strength of this effect in HEDPs to be produced at the National Ignition Facility (NIF) by inducing NPIs on highly-excited (1-5 MeV) nuclear states of ^{133}Xe produced in the (n,2n) reaction with ^{134}Xe in the NIF target.

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