

Abstract Submitted  
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**Study of Stark Broadening of Krypton Helium- $\beta$  Lines and Estimation of Electron Density and Temperature in NIF Compressed Capsules**<sup>1</sup> K.W. HILL, M. BITTER, L. GAO, B.F. KRAUS, P.C. EFTHIMION, PPPL, M.B. SCHNEIDER, D.B. THORN, H. CHEN, R.L. KAUFFMAN, D.A. LIEDAHL, M.J. MACDONALD, A.G. MACPHEE, H.A. SCOTT, LLNL, M.F. GU, UC Berkeley, R. DORON, E. STAMBULCHIK, Y. MARON, Weizmann Institute — The dHIRES (DIM based high resolution) x-ray spectrometer measures Kr He $\alpha$  and He $\beta$  spectra from NIF compressed capsules with 12-eV spectral and 30-ps temporal resolution. Comparison of the measured Kr He $\beta$  spectra with theoretical line shapes provides a measure of the time history of the electron density,  $n_e$ . Electron temperatures,  $T_e$ , are inferred by comparison of ratios of Li-like to He-like Kr line intensities to calculations by SCRAM. Spatial profile effects are calculated by averaging assumed optically thin SCRAM spectra over spherical shells defined by  $n_e(r)$  and  $T_e(r)$  from LASNEX. Comparisons of measured spectra with SCRAM and CRETIN-TOTAL simulations will be shown.

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