

Abstract Submitted
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Analysis of K-shell Fe Spectra Created by Irradiation of a Thin Foil by a High Intensity, Ultrafast Laser and from X-pinches
A. STAFFORD, A.S. SAFRONOVA, University of Nevada, Reno, A.YA. FAENOV, Institute for Academic Initiatives, Joint Institute for High Temperatures, T.A. PIKUZ, Joint Institute for High Temperatures, PPC and Graduate School of Engineering, Osaka University, R. KODAMA, Institute for Academic Initiatives, PPC and Graduate School of Engineering, Osaka University, V.L. KANTSYREV, I. SHRESTHA, V.V. SHLYAPTSEVA, University of Nevada, Reno — Irradiation of a target with an intense ultrafast laser creates multiple regions with different plasma conditions due to the quick interaction of the target with the laser which occurs faster than the radiative decay of the plasma. Three regions are identified with different plasma parameters in experiments with the J-KAREN laser (~ 7 J pulse energy, 35 fs pulse duration, 10^{10} main pulse to prepulse ratio) at the Kansai Photon Science Institute of QST. The laser was used to irradiate 2 micron stainless steel targets. K-shell Fe radiation in the wavelength range of 1.7-1.97 Å was recorded and analyzed. X-ray Spectra from the same spectral region were collected from X-pinches to compare and contrast the radiative differences. The influence of hot electrons and soft X-ray emission on the Fe spectra will be discussed.

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