**Simulation of the Spectral Properties of Materials with Prism-SPECT** JOSEPH MACFARLANE, I. GOLOVKIN, P. WANG, P. WOODRUFF, Prism Computational Sciences, J. BAILEY, T. MEHLHORN, G. ROCHAU, Sandia National Laboratories — PrismSPECT is a collisional-radiative spectral analysis code designed to simulate the atomic and radiative properties of LTE and non-LTE plasmas over a wide range of conditions. For a grid of user-specified plasma conditions, PrismSPECT computes spectral properties (emission and absorption), ionization fractions, atomic level populations, and line intensity ratios. PrismSPECT can compute the properties of plasmas irradiated with external radiation fields, and plasmas with non-Maxwellian electron distributions, and is capable of simulating inner-shell (e.g., K-alpha and K-beta) satellite line emission. PrismSPECT has been used in the analysis of spectra spanning a wide range of conditions. We will present results from the analysis of high-temperature Fe opacity data obtained in dynamic hohlraum experiments at Sandia National Laboratories, as well as spectra obtained from low-temperature laser-produced plasma experiments.

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