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Comparison of STA calculations to measured spectra from hot and dense Ge¹ TECK LEE, United States Naval Research Laboratory (NRL), W JARRAH, D BENREDJEM, Lab. Aime Cotton, U. Paris-Sud, France, J-C. PAIN, CEA, DAM, DIF, Arpajon, France, M BUSQUET, RSI, Lanham, MD 20706, USA, M KLAPISCH, Syntek Technologies, VA, 22203, USA, J.W. BATES, A. J. SCHMITT, J. GIULIANI, NRL — We report emissivity and opacity results from Super-Transition-Array (STA) calculations for hot, dense Ge plasma in order to assess the viability of the model against both experimental spectra and opacity. We show STA model reproduces the emission spectra from the 2p-3d, 2s-3p and 2p-4d transitions measured in a short laser-pulse experiment [1]. Considering the temperature and density gradients in our model, we find that the plasma temperature and density to be Te=600 eV and $\rho = 2.0$ g/cc, respectively, which are close to the values obtained from LTE GRASP2K, CASSANDRA and DAVROS opacity codes. Result from the collisional-radiative code FLYCHK also shows a good fit to the observed spectra, but indicates a plasma Te=800 eV and $\rho = 1.5 \pm 0.5$ g/cc. In addition, we also examine and compare the STA opacity results for a broad range of Ge plasma conditions covering the L- and M-shell spectral range with detailed calculations from the hybrid LTE opacity SCO-RCG code [2]. The sensitivity of the opacity results between the codes to the plasma temperature and mass density is discussed. [1] Hoarty et al., HEDP, 6, 105 (2010); Harris et al., HEDP, 6, 95 (2010). [2] Porcherot, et al., JQSRT, 65, 91 (2000)

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