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Non-LTE kinetics modeling of emission from noble gas plasmas GREGORY ARMSTRONG, Theoretical Divsion, Los Alamos National Laboratory, JAMES COLGAN, DAVID KILCREASE, JOSEPH ABDALLAH, JR., Theoretical Division, Los Alamos National Laboratory, CHRISTOPHER FONTES, HONGLIN ZHANG, Computational Physics Division, Los Alamos National Laboratory — In recent years, international efforts have been made in the development of theoretical models of non-local thermodynamic equilibrium (NLTE) plasma kinetics [1]. Such modeling is of particular relevance to both inertial and magnetic confinement fusion experiments, such as the ongoing ITER project. This work focuses on obtaining emission spectra of neon and krypton over a wide range of electron temperatures and densities. The atomic data are generated with the Los Alamos suite of atomic physics and plasma kinetics codes, developed over many years to calculate atomic structure and atomic scattering quantities. Calculations may be carried out using either a configuration-average model using a mixed UTA approach [2], or a detailed level-to-level fine-structure approach. Previous assessments of the accuracy of these models [3] under a given set of conditions will be of use in this work.

[1] C. J. Fontes et al., 2009 High Energy Density Phys. 5 15

[2] S. Mazevet and J. Abdallah, Jr., 2006 JPB **39** 3419

[3] J. Colgan et al., 2006 High Energy Density Phys. 2 90

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