

Abstract Submitted
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Influence of radiation field on Non-LTE Xe plasmas¹ MARCEL KLAPISCH, MICHEL BUSQUET, ARTEP Inc., Ellicott City, MD 21042 — Several experiments [1,2] and simulations of Xe were recently reported, due to the possibility of simulating scaled radiative shocks [3]. Extensive and systematic detailed computations using HULLAC [4] were performed for Te around 100eV and several densities, with initial conditions far or near LTE. The radiation is described as a Planckian at T_{rad} multiplied by a dilution factor D . In each case, D is varied between 0 and 3 for $T_{\text{rad}}=T_e$, and T_{rad} is varied from 0 to $T_e \cdot 1.5$ with $D=1$. We show that in some cases, the dilution factor has more influence on the average charge Z^* than the ratio T_{rad}/T_e . Taking into account radiation field is very important for evaluating Z^* and non-LTE opacities.

[1] Keiter, P. A., Drake, R. P., Perry, T. S., *et al.*, Phys. Rev. Let. **89**, 165003 (2002).

[2] Busquet, M., Thais, F., Gonzalez, M., *et al.*, J. App. Phys. **107**, 083302 (2010).

[3] Ryutov, D., Drake, R. P., Kane, J., *et al.*, Astrophys. J. **518**, 821 (1999).

[4] Klapisch, M. and Busquet, M., High Ener. Dens. Phys. **5**, 105 (2009).

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