Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Atomic Processes and Diagnostics of Low Pressure Krypton Plasma[1] RAJESH SRIVASTAVA, DIPTI GOYAL, Indian Institute of Technology (I.I.T.) Roorkee, REETESH GANGWAR, LUC STAFFORD, Université de Montréal — Optical emission spectroscopy along with suitable collisional-radiative (CR) model is used in plasma diagnostics. Importance of reliable cross-sections for various atomic processes is shown for low pressure argon plasma [1-2]. In the present work, radially-averaged Kr emission lines from the $2p_i \rightarrow 1s_j$ were recorded as a function of pressure from 1 to 50mTorr. We have developed a CR model using our fine-structure relativistic-distorted wave cross sections [3]. The various processes considered are electron-impact excitation, ionization and their reverse processes. The required rate coefficients have been calculated from these cross-sections assuming Maxwellian energy distribution. Electron temperature obtained from the CR model is found to be in good agreement with the probe measurements.

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[1]Work is supported by IAEA Vienna, DAE-BRNS Mumbai and CSIR, New Delhi.

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Date submitted: 18 Oct 2014 Electronic form version 1.4