Abstract Submitted
for the GEC11 Meeting of
The American Physical Society

**Theoretical Investigation of Transport properties of Ar-He thermal Plasma at High Pressure** ROHIT SHARMA, KULDIP SINGH, Guru Nanak Dev University, Amritsar — Transport properties of Ar-He thermal plasma mixture has been studied in temperature range from 5000 to 30000K at high pressure in local thermodynamic equilibrium (LTE) and non-LTE conditions for different values of non-equilibrium parameter $\theta = T_e/T_h$ . Computations of electron transport properties and their higher-order contribution has been carried out by using the Chapman-Enskog method. The effect of non-equilibrium parameter $\theta = T_e/T_h$ and electronic excitation has been investigated for the electrical conductivity, electron thermal conductivity and electron diffusion. It has been observed that both the electronic excitation and non-equilibrium parameter $\theta$ considerably affect these properties.

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Date submitted: 14 Jul 2011 Electronic form version 1.4