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Effect of electronically excited states on the transport properties in thermal plasmas ROHIT SHARMA, GURPREET SINGH, KULDIP SINGH, Department of Physics, Guru Nanak Dev University, Amritsar — Transport properties of LTE thermal plasma are studied by solving a set of Boltzmann equations in the framework of Chapman – Enskog method. As the convergence of higher order contributions in plasma is slow as compared to that in gases, so a detailed investigation of the variation of these contributions with with temperature and pressure has been carried out. It has been observed that increase of the pressure shifts the ionization equilibrium towards the higher temperature, thereby exhibiting the strong pressure dependance. The electron transport properties such as electron thermal conductivity and electrical conductivity are affected particularly at high pressure by taking and neglecting electronically excited states of the plasma species.

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