

Elementary Energy Transfer Processes in Plasmas: a new approach to the problem

E. Ficocelli Varracchio

The study Collisional energy transfer is fundamental to an understanding of basic processes, such as relaxation in shock waves, gas lasers, ultrasonic dispersion, etc....

Close coupling theory offers, in principle, an exact answer to the problem, but suffers from the drawback of being computationally impractical when the relative kinetic energy of the colliding particles increases.

A newly developed many-body theory takes, instead, a different approach to the problem, in that it builds rigorously a "transition potential" connecting the initial and final target states, and it is therefore much more suitable for numerical computations. An analysis of this "transition potential" and a numerical application of the theory to a collinear collision model will be illustrated at the Conference.

Dr. E. F. Varracchio
Istituto di Chimica Generale ed Inorganica
Centro di Studio per la Chimica dei Plasmi
Via Amendola 173, 70126 Bari
Italy