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***Ionisation* mechanisms in proton-hydrogen atom collisions in 1-dimension**

Collisional ionisation is an important phenomenon. Often a three-body system is studied in order to understand the mechanisms involved in such a process since the associated set of equations is small. However, even for this simple system solution of the full Schrodinger equations remains a formidable problem. Thus, in the recent past attention has been paid in solving the much simpler classical mechanical equations. Further simplification of the problem is done by reducing the dimensionality of the accessible space.

We have studied the proton-hydrogen atom collisions in !-dimension, in detail, by solving classical Hamilton's equations. Quantum nature of the electron is accounted for by a Monte-Carlo technique. The dimensionality of the relevant phase space is reduced to two by driving the projectile through the target at constant velocity. This approximation is justified since it is known that the nuclear dynamics is unimportant at internuclear velocities of interest to us ($>1.0 \times 10^{6} ms^{-1}$).

We have categorised the plots of electron trajectories in phase space into a number of distinct groups according to their characteristic features. Each of these groups represent a distinct mechanism of ionisation. The relative probabilities of occurrence of these mechanisms depend on the intermuclear velocity. We report such probabilities at two different velocities.

The asymptotic ionisation probability distribution is segregated into a number of well separated patches in apace. We have found that there is a one-to-one correspondence between these patches and ionisation mechanisms.