

Asymptotic basis set semiclassical coupled channel calculations for ion-atom collisions: background and test cases

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In the meeting we shall present the theoretical approach and codes that we use to describe the electronic occurring processes in ion-atom/molecule collisions. Focusing on the intermediate energy range, where the impact velocity is comparable to the classical velocity of the active electron in the initial channel, we use a non perturbative semiclassical treatment allowing the accurate description of the various processes which are likely and couple in the domain. Examples for one- and two-active-electron systems will also be presented, illustrating the power of the method but also the difficulties encountered in the calculations.