

Abstract Submitted
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Ionization, single and double electron capture in proton-Ar collisions¹ ALBA JORGE, York University, CLARA ILLESCAS, LUIS MENDEZ, ISMANUEL RABADAN, Universidad Autonoma de Madrid — The formation of anions in collisions of positive ions with atoms has been an usual subject of study in atomic physics due to its importance in different fields, such as astrophysics, plasma physics and surface physics. Special interest has been focused on the formation of H^- in proton collisions with different targets, for which both theoretical and experimental studies have been carried out. From a theoretical point of view, the double electron capture process giving rise to the formation of H^- turns out to be impracticable with one-electron methods, since its probability is two orders of magnitude smaller than those of one-electron processes. A theoretical study on the $H^+ + Ar$ collision has been carried out with a many-electron semiclassical treatment, with an expansion in a basis of electronic functions of the ArH^+ quasimolecule and the two-active electron switching-Classical-Trajectory-Monte-Carlo method (s-CTMC). Total cross sections for formation of H , H^- and electron production in $H^+ + Ar$ collision at energies between 100 eV and 200 keV will be presented at the conference.

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