

Abstract Submitted  
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**Calculation of charge-changing cross sections of ions or atoms colliding with fast ions using the classical trajectory method<sup>1</sup>** ARIEL SHNIDMAN, HARRISON E. MEBANE, IGOR D. KAGANOVICH, RONALD C. DAVIDSON, Princeton Plasma Physics Laboratory — Evaluation of ion-atom charge-changing cross sections is needed for many accelerator applications. A classical trajectory Monte Carlo (CTMC) simulation has been used to calculate ionization and charge exchange cross sections. For benchmarking purposes, an extensive study has been performed for the simple case of hydrogen and helium targets in collisions with various ions. Despite the fact that the simulation only accounts for classical mechanics, the calculations are comparable to experimental results for projectile velocities in the region corresponding to the vicinity of the maximum cross section. Shortcomings of the CTMC method for multielectron target atoms are discussed.

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