

Differential charge-transfer cross sections for  $\text{Na}^{\{+\}}$  with Rb collisions at low energies

Teck Ghee Lee, H. Nguyen, X. Flechard<sup>†</sup>, Brett Depaola and Chii Dong Lin

J. R. Macdonald Laboratory, Department of Physics, Kansas State University,  
Manhattan, KS 66506

<sup>†</sup>LPC CAEN, BVD du Mar{\'e}chal Juin, 14050 CAEN CEDEX, France

We report a theoretical and experimental study of state-selective Differential single electron transfer cross sections between  $\text{Na}^{\{+\}}$  ions with  $\text{Rb}(5s,5p)$  atoms at collision energies of 2, 5, 7 keV. A two-center multi-channels semi-classical impact parameter Close-Coupling method (TC-AOCC) with straight-line trajectories was used to obtain single electron capture amplitudes. By combining with the Eikonal approximation, we calculated the angular differential cross sections. These results are compared to the experimental data obtained with cold Rb targets cooled in a magnetic optical trap (MOT). It is shown that there is a general good agreement between the present calculations and the experiments. Despite of the higher resolution offered from the cold target, the rapid oscillations in the differential cross sections are not resolved by the experiments.

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