KINEMATICALLY COMPLETE LOW ENERGY CHARGE TRANSFER COLLISIONS WITH GROUND AND EXCITED STATES OF Rb*

H. Nguyen, T.G. Lee, R. Bredy, H. Camp, and B. D. DePaola
J. R. Macdonald Laboratory, Kansas State University,
Manhattan KS 66506-2604 USA

Cold Target Recoil Ion Momentum Spectroscopy has been continually developed and improved, becoming a powerful tool for the study of collision processes. The latest in the COLTRIMS developments involves the use of a magneto-optically trapped target. This coupled with conventional recoil ion momentum spectroscopy has been termed MOTRIMS. This modification results in better momentum resolution, and the capability of studying charge transfer with laser-excited targets. We will present the results of detailed studies of charge transfer between Na^+ with Rb(5s) and Rb(5p). These results include differential cross sections for all the major charge transfer channels, over a range of collision energies.

*Supported by the Chemical Sciences, Geosciences and Biosciences Division, Office of Basic Energy Sciences, Office of Science, U. S. Department of Energy.