

Abstract Submitted
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Theoretical and Experimental study of the Spin Asymmetry for Electron Impact Ionization of Xenon¹ D.H. MADISON, A. PRIDEAUX, University of Missouri-Rolla, J. LOWER, S. BELLM, R. PANAJOTOVIC, E. WEIGOLD, Australian National University — The study of differential cross sections for atomic ionization by electron impact has provided a very sensitive and useful tool for determining the importance of different types of physical effects in a collision process. If the spin polarization of the electron beam is also known, an additional level of sensitivity is provided. It was recently shown, for example, that spin dependent measurements for atomic ionization provided a very sensitive test of exchange effects between the projectile electron and atomic electrons which could not be observed in measurements without polarized beams. Although the DWBA (Distorted Wave Born Approximation) results are in reasonably good agreement with spin-asymmetry measurements, there are significant cases of disagreement. New and improved spin- asymmetry measurements for electron impact ionization of xenon have been performed and these measurements will be compared with DWBA and 3DW (3-Body Distorted Wave) calculations. The importance of different scattering mechanisms will be examined.

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