

Abstract Submitted  
for the GEC11 Meeting of  
The American Physical Society

**Electron scattering from krypton: High-resolution electron scattering experiments and B-spline R-matrix calculations**<sup>1</sup> OLEG ZATSARINNY, KLAUS BARTSCHAT, Drake University, MICHAEL ALLAN, University of Fribourg — In a joint experimental and theoretical effort, we carried out a detailed study of elastic scattering and electron impact excitation of the  $4p^55s$  states in Kr. Independently normalized, absolute angle-differential cross sections over the entire angular range ( $0^\circ - 180^\circ$ ) for a number of energies in the near-threshold region, as well as energy scans for selected angles, show very satisfactory agreement between the present experimental results and predictions from a fully relativistic Dirac *B*-spline *R*-matrix model [1,2]. Consequently, we expect our angle-integrated elastic, momentum-transfer, and excitation cross sections to be very suitable for modeling applications.

[1] O. Zatsarinny, K. Bartschat, and M. Allan, Phys. Rev. A **83** (2011) 032713

[2] M. Allan, O. Zatsarinny, and K. Bartschat, J. Phys. B **44** (2011) 065201

<sup>1</sup>Work supported by the NSF under PHY-0903818, PHY-0757755, and the Tera-Grid allocation TG-PHY090031, and the Swiss National Science Foundation under project No. 200020-131962.

Klaus Bartschat  
Drake University

Date submitted: 13 Jul 2011

Electronic form version 1.4