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Electron scattering from krypton: High-resolution electron scattering experiments and B-spline R-matrix calculations[1] 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 $4p^5 5s$ states in Kr. We present 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. Interesting double minima were observed in the elastic cross section as a function of energy for backward angles. The present experimental results are in very satisfactory agreement with predictions from a fully relativistic Dirac B-spline$R$-matrix model [1,2]. They clearly improve the agreement between experiment and theory relative to our earlier comparison [2] with the data of Phillips [3].

[1] O. Zatsarinny and K. Bartschat, Phys. Rev. A **77** (2008) 062701.
[2] T. H. Hoffmann, M.-W. Ruf, H. Hotop, O. Zatsarinny, K. Bartschat, and M. Allan, J. Phys. B **43** (2010) 085206.
[3] J. M. Phillips, J. Phys. B **15** (1982) 4259.

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