Abstract Submitted
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Electron impact ionization of magnesium.[1] DANIEL WEFLEN, XIAOXU GUAN, KLAUS BARTSCHAT, Drake University — We have applied a hybrid method, combining a second-order distorted-wave method for a fast ionizing projectile with an R-matrix (close-coupling) approach for the initial bound state and the ejected electron [1], to calculate electron impact ionization of magnesium. Our results will be compared with recent experimental data [2] and predictions from other theoretical approaches [3]. For various kinematical situations, in-plane and out-of-plane, we analyze the sensitivity of the theoretical results to the details of the computational model. We will suggest additional benchmark experiments to test the various theoretical approaches.

[1] Y. Fang and K. Bartschat, J. Phys. B **34** (2001) L19.
[2] R.W. van Boyen *et al.*, Phys. Rev. A **73** (2006) 032703.
[3] M. Foster *et al.*, Phys. Rev. Lett. **97** (2006) 093202.

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Klaus Bartschat
Drake University

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