

Abstract Submitted
for the GEC10 Meeting of
The American Physical Society

How Good is Theory for Predicting the Absolute Value of (e,2e) Ionization Cross Sections?¹ DON MADISON, SADEK AMAMI, ADAM UPSHAW, Missouri S&T, HARI SAHA, University of Central Florida — Very recently Hargreaves, Stevenson, and Lohmann [to be published] reported measurements of absolute differential cross sections for electron-impact ionization of neon and argon. They compared their absolute measurements with DWBA (distorted wave Born), DW2-RM (second order distorted wave R-matrix), CCC (convergent close coupling), and 3DW (3 body distorted wave) calculations. While none of the theories were in overall very good agreement with experiment, the best agreement was found for the DWBA which is the least sophisticated of all the theoretical approaches. We have improved the DWBA and 3DW calculations by including correlation-polarization effects and by replacing the static exchange continuum waves with Hartree-Fock continuum waves. The sensitivity of the magnitude and shape of cross section to these effects will be presented.

¹Work supported by the NSF under grant 0757749.

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Date submitted: 13 Jun 2010

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