Abstract Submitted
for the GEC07 Meeting of
The American Physical Society

Projectile Interactions in Simultaneous Excitation-Ionization of Helium[1] A.L. HARRIS, University of Missouri-Rolla, M. FOSTER, Los Alamos National Laboratory, J.L. PEACHER, D.H. MADISON, University of Missouri-Rolla — The importance of projectile interactions in fully differential cross sections (FDCS) will be explored for the problem of simultaneous excitation-ionization by electron impact. We will compare the results of two theories- the first Born approximation (FBA) and the four-body distorted wave model (4DW). In the first Born approximation (FBA), the projectile electron is treated as a plane wave, the ejected electron is treated as a Hartree Fock distorted wave, and the final state Coulomb interaction between the two continuum electrons is ignored. In the 4DW model, all continuum electrons are treated as Hartree Fock distorted waves, and a Coulomb distortion factor is included in the final state to account for the interaction between the two outgoing electrons. Results will be presented for an incident electron energy of 500 eV and will be compared to experimental data.

[1]Work supported by NSF grant PHY-0456528.

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Date submitted: 18 Jun 2007 Electronic form version 1.4