

Abstract Submitted
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Quantitative Theory for Electron-Atom Scattering COLM T. WHELAN, Physics Department Old Dominion University, ROBERT K. NESBET, IBM Almaden Research Center, JASON. MARTINEZ, Physics Department Old Dominion University — The aim of this work is to develop a general approach to electron and photon impact ionization. This approach should

1. be non-perturbative,
2. not be restricted to simple systems,
3. be straightforward to systematically improve,
4. be computationally efficient,
5. treat symmetric problems symmetrically.

R operator formalism The concept of an R-matrix has been extended to a general coordinate hyperspace by the introduction of an R-operator, [1]. We have developed an approach to electron-atom scattering within the context of the R-operator formalism. Results will be presented for the Temkin-Poet problem [2, 3] as well as for e-H collisions. [1] R. K. Nesbet, Phys. Rev. B, **30**, 4230, 1984 [2] A. Temkin, Phys. Rev. A, **126**, 130, 1962 [3] R. Poet, J. Phys. B, **13**, 2995, 1980

Colm T. Whelan
Physics Department Old Dominion University

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