

Abstract Submitted
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Electron Impact Ionization of Heavier Ions¹ B.C. SAHA, Department of Physics, Florida A&M University — The electron impact ionization (EII) is a dominant ion creation process in various kinds of plasmas. Hydrogenic atoms occurs not only in plasmas but may also be formed due to radiation effects in many organic and inorganic materials. Apart from its fundamental importance in collisional physics the knowledge of the EII cross sections finds its wide applications in modeling astrophysical and fusion plasmas. So the demand of the EIICS is enormous. It is hard to fulfill such a demand either by experimental or *ab initio* calculations. Thus various analytical and semi-classical models are employed to generate accurate EII cross sections. We report here a modified version [1] of the Bell et. al. equations [2] including both the ionic and relativistic corrections (MBELL). We generalize the MBELL parameters for treating the dependency of the orbital quantum numbers nl ; evaluating cross sections for various species at different energies tests the accuracy of the procedure. Detail will be presented at the meeting.

[1] A. K. F. Haque, M. A. Uddin, A. K. Basak, K. R. Karim and B. C. Saha, Phys. Rev. A73, 052703 (2006).

[2] K. L. Bell, H. B. Gilbody, J. G. Hughes, A. E. Kingston, and F. J. Smith, J. Phys. Chem. Ref. Data 12, 891 (1983).

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