

Abstract Submitted
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Application of Polarization effects in the initial state and the Screening Potential in the final state to the ionization of helium by electron impact HARIPADA SAHA, University of Central Florida, Orlando — We will report the results of our investigation on the ionization of atoms by electron impact using our recently extended MCHF theory of electron impact ionization of atoms [1]. The triple differential cross sections for electron impact ionization of helium atom will be calculated for 70.6 eV incident electron energy. The Multiconfiguration Hartree-Fock method for continuum electron wave function will be used to calculate polarization of the helium target by the incident electron. The effect of electron correlation between the two final state continuum electrons will be approximated by the variationally determined screening potential [2-3]. The excess electron energy will be shared equally and unequally by the two final state continuum electrons. The results will be compared with the experimental and accurate theoretical calculations [4].

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[3] C.Pan and A.F Starace, Phys. Rev. Lett. 67, 185 (1991); Phys. Rev. A45, 4588 (1992).

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