

Abstract Submitted
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Extension of Multiconfiguration Hartree-Fock method to allow Double Photoionization of Atoms HARI P. SAHA, University of Central Florida, Orlando — Very recently we were successful in extending the multiconfiguration Hartree-Fock (MCHF) method for electron impact ionization of atoms [1,2] to allow double photoionization of atoms. In the meeting we will report, as a test case, the results of double photoionization of helium atom using the extended MCHF method. We will present results of our calculation for triple differential, single differential and total cross section for double photoionization of helium. We have calculated the initial state in the Hartree-Fock (HF) and the MCHF approximations and the final state in the Coulomb and the HF approximation to reproduce the previously published works. We will compare the present results with available theoretical and experimental data. Finally we will discuss our plan how to obtain electron correlation between two final state continuum electrons completely ab-initio.

[1] Hari P. Saha, Phys. Rev. A 77, 062705 (2008)

[2] Hari P. Saha Phys. Rev. A 82, 042703 (2010).

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