Abstract Submitted
for the DAMOP13 Meeting of
The American Physical Society

Application of the screening potential approach for Electron Impact ionization of rare-gas atoms HARI P. SAHA, University of Central Florida, Orlando — The triple differential cross section for electron impact ionization of rare-gas atoms will be investigated using our recently extended MCHF method [1]. It is well known electron correlation effects in both the initial and the final states are very important. To incorporate these effects we will use the multi-configuration Hartree-Fock method to account for electron correlation in the initial state. The electron correlation in the final state will be taken into account using the angle-dependent screening potential approximation [2,3]. As a test case, the triple differential cross section (TDCS) will be calculated for electron impact ionization of Argon atom, which has experimental results. Our results will be compared with available experimental and the theoretical observations [4].

[1] H.P. Saha, (unpublished).
[2] M.R.H. Rudge, Rev. Mod. Phys. 40, 564 (1968).
[3] C.Pan and A.F Starace, Phys. Rev. Lett. 67, 185 (1991); Phys. Rev. A45, 4588 (1992).
[4] Ren et al., Phys. Rev. A 85, 032702 (2012).

Hari P. Saha
University of Central Florida, Orlando

Date submitted: 22 Jan 2013 Electronic form version 1.4