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K-Shell Ionization of Neutral Targets by Electron Impact A.K.F. HAQUE, M.S.I. SARKER, M.A.R. PATOARY, M. SHAHJAHAN, M.I. HOSSAIN, M.A. UDDIN, A.K. BASAK, Department of Physics,University of Rajshahi, Bangladesh, B.C. SAHA, Department of Physics, Florida A&M University, Florida-32307. — The electron impact K-shell ionization cross sections (EIKICS) are needed in diverse fields, such as plasma-, radiation-, astro-physics. For plasma modeling the demand of EIKICS is enormous; this can only be fulfilled by simple analytical or semi-classical models that can generate efficiently accurate results over broad ranges of projectile energies and target species. We modified the Deutsch-Mark [1] model by incorporating ionic and relativistic corrections and applied to evaluate K-shell ionization cross sections for 30 atomic targets, $1<Z<92$ for $1<E<2$ GeV with very encouraging results as compared to available experimental findings. Work is supported by NSF, CREST project.
[1] H. Deutsch, P. Scheier, K. Becker, T. D. Mark, Int. J of Mass Spectrom, 233, 13 (2004).

Bidhan Saha
Department of Physice

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