Electron impact excitation cross sections into \((3p)^55p\) levels from the \((3p)^54s\) metastable level of Ar by the Kim B-E-f Scaling method.\(^1\)

M.A. ALI, P.M. STONE, National Institute of Standards and Technology, Gaithersburg, MD — We present results for electron impact excitation cross sections from \((3p)^54s, 1s_5\) and \(1s_3\) metastable states of Ar to \((3p)^55p, 3p_1\) to \(3p_{10}\) states, which are dipole allowed by the use of the Kim B-E-f Scaling procedure \([1]\). We use the experimental excitation energy for E-scaling and accurate f values of Zatsarinny and Bartschart \([2]\) for f-scaling. We compare our results with apparent excitation cross sections recently reported by Jung et al. \([3]\). Our results suggest that cascade contributions for the upper levels are substantial. To gauge the accuracy of B-E-f scaling, we also present similar results for \((3p)^54s, 1s_5\) and \(1s_3\) metastable states to \((3p)^54p, 2p_1\) to \(2p_{10}\), dipole allowed states and compare with the distorted wave results of Srivastava et al. \([4]\).


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