

Abstract Submitted
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Photoionization accompanied by excitation at intermediate photon energies EVGENII DRUKAREV, EVGENY LIVERTS, MIRON AMUSIA, RAJMUND KRIVÉC, VICTOR MANDELZWEIG — We calculate the photoionization with excitation- to photoionization ratios $R_{n\ell}$ and $R_n = \sum_{\ell} R_{n\ell}$ for atomic helium and positive heliumlike ions at intermediate values of the photon energies. The final state interactions between the electrons are included in the lowest order of their Sommerfeld parameter. This enables us, in contrast to purely numerical calculations, to investigate the roles of various mechanisms contributing beyond the high-energy limit. The system of the two bound electron is described by the functions obtained by the Correlation Function Hyperspherical Harmonic Method. For the case of heliumlike ions we present the high energy limits as power expansion in inverse charge of the nucleus. We analyze the contribution of excitation of states with nonzero orbital momenta to the ratios R_n . In the case of helium our results for R_n are in good agreement with those of experiments and of previous calculations.

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