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Shape variation of the two-electron photoionization spectrum with photon energy growth MIRON YA. AMUSIA, EVGENY Z. LIVERTS, VICTOR B. MANDELZWEIG, Racah Institute of Physics, The Hebrew University of Jerusalem, Israel, EVGENII G. DRUKAREV, St. Petersburg Nuclear Physics Institute, Russia, RAJMUND KRIVEC, Department of Theoretical Physics, J.Stefan Institute, Ljubljana, Slovenia — We trace the evolution of the energy spectrum of both outgoing electrons emitted after absorption of a single photon with the latter's energy growth. We use quite precise non-variation two-electron initial state wave functions, obtained by Correlation Function Hyperspherical Harmonic Method. We obtain the values of ω_1 and ω_2 at which the spectrum curve changes it shape. At $\omega = \omega_1$ the usually considered **U**-shape changes to **W**-shape. At $\omega = \omega_2$ the central **W** peak splits into two. We consider ground states of the helium atom and of helium-like ions with the nuclear charge Z, the negative ion of hydrogen H^- and the excited n^1S state of helium. The limiting laws for $Z \gg 1$ and $n \gg 1$ are obtained. The analysis is carried out without calculations of the particular energy distributions. We believe that the predicted features could be observed experimentally detecting both outgoing electrons in coincidence.

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