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Photoionization of Xe confined in C_{60} ZHIFAN CHEN, ALFRED Z. MSEZANE, Clark Atlanta University — The photoionization cross section for the endohedral Xe@C_{60} atom is investigated by modeling the C_{60} as an attractive short range spherical shell with potential $V(r)$, given by $V(r) = -V_0$ for $r_i < r < r_0$, otherwise $V(r) = 0$ where r_i and r_0 are respectively, the inner and outer radius of the spherical shell. The radial part of the wave functions in the three regions of $r < r_i$, $r_i < r < r_0$, and $r > r_0$ have been obtained by solving the Schrödinger equation analytically with the continuous boundary conditions ar r_i and r_0. The photoionization cross sections for the Xe 4d giant resonance inside C_{60} using our model potential differ significantly when compared with the results of a δ-like potential well.

Zhifan Chen
Clark Atlanta University

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