

Abstract Submitted
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Inner shell resonances in the outer shell photoionization of Xe@C₆₀ MIRON AMUSIA, Racah Institute of Physics, Hebrew University, Jerusalem, Israel, LARISSA CHERNYSHEVA, Ioffe Physical-Technical Institute, St.-Petersburg, Russia — Fullerenes C₆₀ can be stuffed by almost all atoms A or even simple molecules. It is demonstrated by the example of the 5p-subshell of the Xe atom stuffed inside the C₆₀ fullerene, i.e. the endohedral Xe@C₆₀ that the so-called confinement resonances in 4d subshell strongly affect the absolute and differential in the photoelectron emission angle cross-section of 5p electrons photoionization in the region of 4d ionization threshold. It is a sort of a surprise that the narrow inner shell resonances are not smeared out in the outer shell photoionization cross-section. Inner shell resonances affect the outer cross-section by enhancing this enormously and modifying 5p dipole and non-dipole angular anisotropy parameters. Close to its own photoionization threshold, 5p photoionization cross-section of Xe@C₆₀ is dominated by its own confinement resonances greatly enhanced by the intensity of incoming radiation due to polarization of the C₆₀ electron shell by the incoming photon beam. In between, the 4d and 5p thresholds, the effect of 4d is becoming stronger while own resonances of 5p are becoming less and less important.

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