Abstract Submitted
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Energetic photoionization spectroscopy in the configuration space for atom-fullerene endohedral compounds[1] RUMA DE, MATTHEW MCCUNE, DALE HOPPER, HIMADRI CHAKRABORTY, Northwest Missouri State University, Maryville, MO 64468 — In the photoionization of an atom confined in a fullerene the electrons directly ionized from the atom partly reflect at the cage. The delocalization of outer atomic electrons also leads to significant collateral emission from the cage site [1]. On the other hand, the atom-fullerene hybrid electrons emanate in a channel with roughly equal mix of dual character. Further, the low angular momentum fullerene electrons, that see weaker centrifugal barrier potential, emerge by a unusual ionization pathway, originating from the interior Coulomb region [2]. The interference among these amplitudes produces distinct oscillation patterns in the cross sections at energies higher than the plasmon energy region. It is shown that the transformation of a subshell cross section to the radial co-ordinates uniquely identifies the electron emission site in the compound. Results are presented for $Xe@C_{60}$.

[1] McCune et al., *Phys. Rev.* A **80**, 011201(R) (2009)
[2] Hopper et al., *J. Phys.* B (submitted).

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