

Abstract Submitted
for the DAMOP09 Meeting of
The American Physical Society

Photoionization of positive and negative ions stuffed inside C60 fullerene MIRON YA. AMUSIA, Racah Institute of Physics, Hebrew University, Jerusalem, Israel and Ioffe Physico-Technical Institute, St. Petersburg, Russia, LARISSA V. CHERNYSHEVA, Ioffe Physico-Technical Institute, St. Petersburg, Russia — We performed calculations of photoionization cross-section and other parameters characterizing this process for endohedrals consisting of C60 and located at the center inside noble gas atom and adjacent positive and negative ions. We have considered outer p - and s - subshells for the groups (F^- , Ne, Na^+), (Cl^- , Ar, K^+) and outer p -, s - and d - subshells for the groups (Br^- , Kr, Rb^+) and (I^- , Xe, Cs^+). The possibility that the outer electron from the negative ion goes to the fullerenes shell was neglected. The fullerenes shell was described by the zero-thickness “orange-type” potential that was taken into account non-perturbatively, in the RPAE frame. In all considered cases, as it should be, the inclusion of the fullerenes shell transformed the smooth atomic photoionization cross-section (and other photoionization parameters) curves into strongly oscillating curves. There appeared a systematic difference between negative ions on the one hand and neutral atoms and particularly positive ions on the other. Namely, the negative ions presented much richer near threshold structure than their isoelectronic neighbors.

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Date submitted: 23 Jan 2009

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