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**Modification of endohedral potential after instant ionization of the inner atom.** MIRON AMUSIA, Hebrew Univ of Jerusalem; Ioffe Phys-Tech Institute, ARKADIY BALTENKOV, Arifov Institute of Ion-Plasma and Laser Technologies, LARISSA CHERNYSHEVA, Ioffe Phys-Tech Institute — We investigate the variation of endohedral  $A@C_N$  potential due to addition at the center of it a positive charge, for example, in the process of inner atom A ionization. Using a reasonable model to describe the fullerenes shell, we managed to calculate the variation that is a consequence of the monopole polarization of  $C_N$  shell. We analyze model potentials with flat and non-flat bottoms and demonstrate that the phenomenological potentials that properly simulates the  $C_{60}$  shell potential should belong to a family of potentials with a non-flat bottom. As concrete example, we use the Lorentz-bubble model potential. By varying the thickness of this potential, we describe the various degrees of the monopole polarization of the  $C_{60}$  shell by positive electric charge in the center of the shell. We calculated the photoionization cross-sections of He, Ar and Xe atoms located at the center of  $C_{60}$  shell with and without taking into account accompanying this process monopole polarization of the fullerenes shell. Unexpectedly, we found that the monopole polarization do not affect the photoionization cross sections of these endohedral atoms.

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