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Giant resonances of endohedral atoms M. YA. AMUSIA, ARKADIY BALTENKOV, LARISSA CHERNYSHEVA — We demonstrate for that the effect of fullerene shell upon photoionization of the "caged" atom in an endohedral can result in formation of Giant Endohedral Resonances or GER. This is illustrated by the concrete case of $Xe@C_{60}$ photoionization cross-section that exhibits at 17 eV a powerful resonance with total oscillator strengths of about 25. The prominent modification of the $5p^6$ electron photoionization cross-section of $Xe@C_{60}$takes place due to strong fullerene shell polarization under the action of the incoming electromagnetic wave and oscillation of this cross-section due to the reflection of the photoelectron from Xe by the C_{60}. These two factors transform the smoothly decreasing $5p^6$ cross-section of Xe into a rather complex curve with a powerful maximum for $Xe@C_{60}$, with the oscillator strength of it being equal to 25! We present also the results for the dipole angular anisotropy parameter that is strongly affected by the reflection of the photoelectron waves but not modified by C_{60}polarization.

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