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Destruction and Resurrection of Atomic Giant resonances in Endohedral Atoms A@C_{60} M. YA. AMUSIA, Racah Institute of Physics, Jerusalem, Israel and Ioffe Physical-Technical Institute, St. Petersburg, Russia, A.S. BALTENKOV, Arifov's Institute of Electronics, Tashkent, Uzbekistan, L.V. CHERNYSHEVA, Ioffe Physical-Technical Institute, St. Petersburg, Russia — In photoabsorption by endohedral atoms some atomic Giant resonances are almost completely destroyed while the others are totally preserved due to different action on it of the fullerenes shell. As the first example we discuss the $4d^{10}$ Giant resonance in Xe@C_{60} whereas as the second serves the Giant *autoionization* resonance in Eu@C_{60}. The qualitative difference comes from the fact that photoelectrons from the $4d$ Giant resonance has small energies (tens of eV) and are strongly reflected by the C_{60} fullerenes shell. As to the Eu@C_{60}, Giant autoionization leads to fast photoelectrons (about hundred eV) that go out almost untouched by the C_{60} shell. As a result of the outgoing electrons energy difference the atomic Giant resonances will be largely destroyed in A@C_{60} while the Giant autoionization resonance will be almost completely preserved. On the way from Xe@C_{60} to Eu@C_{60} the oscillation structure should disappear in cross-sections and angular anisotropy parameters.

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