

Abstract Submitted
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Modulations in the Relative Double-Photoionization Cross Section¹ P.N. JURANIĆ, Synchrotron Radiation Center, Univ. of Wisconsin-Madison, K. BARGER², Western Washington University, D. LUKIĆ³, Columbia Astrophysics Laboratory, New York, NY, R. WEHLITZ, Synchrotron Radiation Center, Univ. of Wisconsin-Madison — A modulation in the C_{60}^{2+}/C_{60}^{+} photoionization cross-section ratio has been observed by using monochromatized synchrotron radiation between 19 and 280 eV⁴. The modulations in the ratio have local maxima at certain excess energies (=photon energy minus double-ionization threshold). Each energy corresponds to an electron's de Broglie wavelength that fits between certain locations of two carbon atoms in the C_{60} molecule. While these modulations are small at near-threshold energies, they become much more pronounced at higher energies. It seems that in the double-photoionization process, one of the electron bounces between two carbon atoms if its de Broglie wavelength matches that distance. Eventually, it will transfer some of its energy to the second electron, which is then able to escape together with the first electron.

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