

Abstract Submitted
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Inter-Coulombic decay (ICD) of endofullerene inner-vacancies in coherence with the Auger decay¹ MAIA MAGRAKVELIDZE², RUMA DE, Northwest Missouri State University, Maryville, USA, MOHAMMAD JAVANI, Georgia State University, Atlanta, USA, MOHAMED MADJET, QEERI, Hamad Bin Khalifa University, Doha, Qatar, STEVEN T. MANSON, Georgia State University, Atlanta, USA, HIMADRI CHAKRABORTY, Northwest Missouri State University, Maryville, USA — For an endohedrally confined atom in a fullerene, an innershell vacancy created either in the atom or the fullerene can decay through the continuum of an outer electron hybridized between the systems. Such decays, which can be viewed as coherent superpositions of the single-center Auger and two-center inter-Coulombic (ICD) amplitudes, are found to govern leading decay mechanisms in endofullerenes [1]. Resonances calculated by the method of time-dependent local density approximation (TDLDA) [2] in the photoionization of noble gas endofullerenes show details of the underlying processes [3]. These resonances are found to be significantly stronger than both regular ICD and Auger resonances, which make them well amenable for experimental detection. [1] Javani *et al.*, PRA **89**, 063420 (2014); [2] Madjet *et al.*, PRA **81**, 013202 (2010); [3] Magrakvelidze *et al.*, [arXiv:1512.03377](https://arxiv.org/abs/1512.03377) [physics.atm-clus]

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²Current address: Kansas State University, Manhattan, USA

Himadri Chakraborty
Northwest Missouri State University, Maryville, USA

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