

Abstract Submitted  
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**Coherence of inter-Coulombic (ICD) and electron transfer mediated (ETMD) decay in endofullerenes**<sup>1</sup> RUMA DE, MAIA MAGRAKVELIDZE<sup>2</sup>, Northwest Missouri State University, Maryville, 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 the photoionization of noble gas endofullerenes, the decay of fullerene innershell vacancies through the continuum of a subvalent electron in the confined atom *via* the inter-Coulombic decay (ICD) pathway is calculated in the time-dependent local density approximation (TDLDA) scheme [1]. Excitations to atom-fullerene hybrid states indicate coherence between ICD and electron-transfer mediated decay (ETMD) [2]. This coherence requires that both the fullerene and the trapped atom have dipole-allowed final states, continuum and quasi-discrete, of the same symmetry. This should be the dominant above-threshold decay process for a variety of confined systems, and the strength of these resonances is such that they should be accessible for study by photoelectron spectroscopy. [1] Madjet *et al.*, PRA **81**, 013202 (2010); [2] De *et al.*, arXiv:1512.07291 [physics.atm-clus]

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