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**Photoionization dynamics of Ar and K<sup>+</sup> trapped inside fullerenes<sup>1</sup>**

HARI VARMA RAVI, AFSAL THUPPILAKKADAN, IIT Mandi — Wigner photoionization time delay studies are found to be a powerful tool to understand photoionization dynamics of atoms trapped inside fullerenes [1, 2, 3]. In this work, we report theoretical photoionization studies of Ar and K<sup>+</sup> trapped inside neutral and in charged fullerenes exploring the role of electron correlation and confinement effects along the isoelectronic sequence. The external cages are modeled by spherical potentials as reported in literature [3, 4]. The well known relativistic random phase approximation [5] is employed to obtain the cross section and the Wigner time delay. The polarization effects are not included in the present work as it is a preliminary study in this direction. It is found that the presence of confinement induces different effects on the cross section and on the time delay spectrum of Ar and K<sup>+</sup> especially near the threshold region. [1] Pazourek et al., Rev. mod. phy. 87 765 (2015). [2] P. C. Deshmukh et al., Phys. Rev. A 89, 053424 (2014). [3] A. Kumar et al., Phys. Rev. A 94, 043401 (2016). [4] V.K. Dolmatov, S. T. Manson, Phys. Rev. A 73, 013201 (2006). [5] W. R. Johnson and C. D. Lin., Phys. Rev. A 20, 964 (1979)

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