

Abstract Submitted
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Time delay in photoionization from confined atoms: A contrasting study of hard Vs smooth jellium model potential.¹ HARI VARMA RAVI, School of Basic Sciences, IIT Mandi, Mandi-175005, H.P. 175005, SUBHASHISH SAHA, Department of Physics, Indian Institute of Technology Patna, Bihta-801103, Bihar, India, AFSAL THUPPILAKKADAN, School of Basic Sciences, IIT Mandi, Mandi-175005, H.P. 175005, JOBIN JOSE, Department of Physics, Indian Institute of Technology Patna, Bihta-801103, Bihar, India — In recent years, time delay studies have gained prominence in the photoionization studies of atomic systems [1]. Photoionization from the confined systems has gained wide interest due to the confinement induced modifications in the structure and dynamics [2]. A number of works related to the photoionization time delay from atoms confined by a hard potential have been reported. Conventionally an annular square well potential (ASW) has been used to simulate the confinement environment. However, this model has unrealistic discontinuity at the shell boundaries. Here we explore the possibility of a jellium model potential, termed as Gaussian annular square well potential (GASW), to investigate cross section, phase shift and time delay in the photoionization of confined H and Ar [3, 4]. We provide a comparison of the numerical and analytical results of the photoionization dynamics obtained from these two models. **References** [1] Pazourek et al. 2015 Rev.mod.phy. 87 765 [2] P. C. Deshmukh et al. 2014 Phys. Rev. A 89 053424 [3] Anh-Thu Le et al. 2009 Phys. Rev. A 80 013401 [4] M. J. Puska et al. 1993 Phys. Rev. A 47 1181

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