

Abstract Submitted
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Angular dependence of EWS time delay for photoionization of @Xe ANKUR MANDAL, Indian Institute of Technology Madras, PRANAWA DESHMUKH, Indian Institute of Technology Tirupati, ANATOLI KHEIFETS, Australian National University, VALERIY DOLMATOV, University of North Alabama, STEVEN MANSON, Georgia State University — Interference between photoionization channels leads to angular dependence in photoionization time delay [1, 2]. Angular dependence is found to be a common effect for two-photon absorption experiments very recently [3]. The effect of confinement on the time delay [4, 5] where each partial wave contributions to the ionization are studied. In this work we report angular dependence and confinement effects on Eisenbud-Wigner-Smith (EWS) time delay in atomic photoionization. Using [6] and [1] we computed the EWS time delay for free and confined Xe atom for photoionization from inner $4d_{3/2}$ and $4d_{5/2}$ and outer $5p_{1/2}$ and $5p_{3/2}$ subshells at various angles. The calculated EWS time delay is few tens to few hundreds of attoseconds (10^{-18} second). The photoionization time delay for @Xe follows that in the free Xe atom on which the confinement oscillations are built. The present work reveals the effect of confinement on the photoionization time delay at different angles between photoelectron ejection and the photon polarization. [1] A. Kheifets et al, Phys. Rev. A **94** 013423 (2016); [2] J. Wätzel, et al, J. Phys. B **48**, 2: 025602 (2014); [3] S. Heuser et al. Phys. Rev. A **94** 063409 (2016); [4] P. C. Deshmukh et al, Phys. Rev. A **89** 053424 (2014); [5] G. Dixit et al, Phys. Rev. Lett. **111** 203003 (2013); [6] W. R. Johnson and C. D. Lin, Phys. Rev. A **20** 964 (1979).

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