

Abstract Submitted
for the DAMOP20 Meeting of
The American Physical Society

Photoionization of the n=4 subshells along the Xe isonuclear sequence¹ AARTHI GANESAN, J. B. A. S. College for Women, PRANAWA DESHMUKH, IIT-Tirupati, STEVEN MANSON, Georgia State U, — Inner shell photoionization cross sections angular distributions of 4s, 4p and 4d subshells are studied along the isonuclear sequence Xe, Xe⁶⁺, Xe⁸⁺ using the relativistic random phase approximation RRPA [1] and the RRPA *with* relaxation [2]. Photoionization time delay [3, 4] is calculated as well. The effect of the increasing nuclear charge on the Cooper minimum [5] of the n = 4 subshells is studied in some detail. Photoionization time delay is found to be sensitive to electron correlations and is addressed both the relaxed and unrelaxed relativistic RRPA. The atomic time delay measured in the XUV/IR two-photon ionization experiments consists of two components: the Wigner-Eisenbud-Smith (WES) component [6-8], and the Coulomb laser coupling component. The WES component is associated with the XUV photon absorption [9], and is the main focus of the present study. Results obtained from the RRPA and the RRPA-R are compared to understand the effects of relaxation on the photoionization dynamics. [1] W. R. Johnson and C. D. Lin, Phys. Rev. A **20**, 964 (1979); [2] V. Radojević and W. R Johnson, Phys. Rev. A **31**, 2991 (1985); [3] A. S. Kheifets, Phys. Rev. A **87**, 063404 (2013); [4] S. Saha *et al.*, Phys. Rev. A **90**, 053406 (2014); [5] J. W. Cooper, Phys. Rev. A **47**, 1841 (1962); [6] E. P. Wigner, Phys. Rev. **98**, 145 (1955); [7] L. Eisenbud, Ph.D. thesis, Princeton University, 1948; [8] F. T. Smith, Phys. Rev. **118**, 349 (1960).

¹Work supported by the DOE Office of Science

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Date submitted: 24 Jan 2020

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