Abstract Submitted
for the DAMOP17 Meeting of
The American Physical Society

Relativistic effects in photoionization: Wigner time delay for the noble gases and IIB atoms SOURAV BANERJEE, Indian Institute of Technology Madras, PRANAWA DESHMUKH, Indian Institute of Technology Tirupati, VALERIY DOLMATOV, University of North Alabama, ANATOLI KHEIFETS, Australian National University, STEVEN MANSON, Georgia State University — Time delay in atomic photoionization has been observed in several experiments [1, 2], and various theoretical and experimental approaches are developing rapidly to obtain a better understanding of this phenomena [3]. Theoretical methods that account for many body correlations include the relativistic random phase approximation (RRPA) [4] and its non-relativistic analogue, RPAE [5]. Calculations using RRPA are performed and the impact of relativistic interactions on Wigner time delay are explored *via* comparison of this result with RPAE results [6, 7]. In addition, results on Wigner time delay for Zn Cd and Hg are presented. [1] M Schultze *et al*, *Science* **328**, 1658 (2010). [2] K Klünder *et al, PRL* **106**, 143002 (2011). [3] R. Pazourek, *et al*, Rev. Mod. Phys. **87**, 765 (2015) [4] W. R. Johnson, C. D. Lin, *Phys. Rev. A* **20,** 964 (1979) [5] M.Y.Amusia, *Atomic Photoeffect* (Plenum Press, New York, 1990). [6] A. S. Kheifets, Phys. Rev. A **87**, 063404 (2013). [7] A. Kheifets *et al*, Phys. Rev. A **94**, 013423 (2016).

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Date submitted: 02 Feb 2017 Electronic form version 1.4