Abstract Submitted
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Wigner-Smith time delay and its application to attosecond streaking[1] CORY GOLDSMITH, JILA, Department of Chemistry, University of Colorado - Boulder, JING SU, ANDREAS BECKER, AGNIESZKA JARON-BECKER, JILA, Department of Physics, University of Colorado - Boulder — Attosecond streaking experiments have been suggested as a means for observing temporal delays in photoemission, but the interpretation of the time delays observed in such experiments is still debated. Using a calculation of the streaking delays as a field-weighted sum over finite-range delays accumulated over the duration of the streaking pulse length [1], we provide further analysis into the role the Coulomb potential plays in the observed, so-called "streaking delay." To this end, we make use of cut-off Coulomb and single active electron (SAE) potentials to calculate field-free Wigner-Smith-like time delays accumulated over small intervals of time to formulate an analytical model for the calculation of the streaking delays for hydrogenic atoms, as well as for SAE model potentials for noble gases. Our results indicate that in most cases, the influence of the streaking field on the short-range parts of the potential is a small effect. This allows for the representation of the streaking delay as the sum of the Wigner-Smith (WS) delay from scattering theory and the coupling between the streaking and Coulomb fields. [1] J. Su *et al.* Phys. Rev. A, **88**, 023413 (2013).

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