

Abstract Submitted  
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**Streaking induced finite-range time delays<sup>1</sup>** JING SU, HONGCHENG NI, ANDREAS BECKER, AGNIESZKA JARON-BECKER, JILA and Department of Physics, University of Colorado at Boulder — We theoretically study time delays for photoionization in a streaking experiment by numerically solving the time-dependent Schrödinger equation. Our results show that the time delay in the numerical simulations is solely induced by the coupling between the streaking field and the atomic potential, and can be well approximated by a classical approach. The analysis implies that the time delay is related to a finite range in space, over which the emitted electron propagates during the interaction with the streaking field along its polarization direction. We also demonstrate that, for a short-range potential, in certain limiting cases the streaking induced finite-range time delay approaches the Wigner-Smith time delay.

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