Abstract Submitted
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Time delays for attosecond streaking in photo-ionization of neon[1] JOHANNES FEIST, Universidad Autónoma de Madrid, OLEG ZATSARINNY, Drake University, STEFAN NAGELE, RENATE PAZOUREK, JOACHIM BURGDÖRFER, Vienna University of Technology, XIAOXU GUAN, KLAUS BARTSCHAT, Drake University, BARRY SCHNEIDER, NIST — Time-resolved photoemission in neon atoms as probed by attosecond streaking has been of much interest and debate. We compute streaking time shifts for the emission of 2p and 2s electrons and their relative delay and compare with recent experimental data by Schultze et al. [Science **328**, 1658 (2010)]. We employ the B-spline R-matrix method to calculate accurate Eisenbud-Wigner-Smith time delays from the multielectron dipole transition matrix elements for photoionization. The laser field-induced time shifts in the exit channel are obtained from separate, time-dependent simulations of a full streaking process by solving the time-dependent Schrödinger equation on the single-active-electron level. The resulting relative streaking time shifts between 2s and 2p emission lie well below the experimental data. We identify the presence of unresolved shake-up satellites in the experiment as a potential source of error in the determination of streaking time shifts. However, preliminary results indicate that shake-up states only increase the discrepancy between calculation and experiment.

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