Abstract Submitted
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Temporal Observation of Interchannel Coupling in Molecular Photoionization[1] ANDREI KAMALOV, PHILIP H. BUCKSBAUM, Stanford PULSE Institute, SLAC National Accelerator Laboratory, DANIEL J. HAXTON, KLA Corporation, JAMES P. CRYAN, Stanford PULSE Institute, SLAC National Accelerator Laboratory — Molecular photoionization delays are measured for the X $^2\Pi_g$, A $^2\Pi_u$, and B $^2\Sigma_u^+$ cationic states of CO_2 using the Reconstruction of Attosecond Beating By Interference of Two-photon Transitions (RABBITT) technique. We compare these measured values with quantum mechanical calculation of the photoionization scattering phase. Our results show that interchannel continuum coupling is necessary to explain the observed result. Moreover, this interchannel continuum coupling is particularly important in the vicinity of a molecular shape resonance and near autoionizing molecular Rydberg states. This approach is a first step towards time-resolving electron correlation in molecular photoionization.

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