

Abstract Submitted  
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**Exploring Ultrafast Molecular Dynamics using Photoelectron Spectra from UV/XUV Pump-Probe Experiments** ELIO CHAMPENOIS, Department of Applied Science and Technology, UC Berkeley, JAMES CRYAN, SLAC National Accelerator Laboratory, NIRANJAN SHIVARAM, TRAVIS WRIGHT, ALI BELKACEM, Chemical Sciences Division, LBNL — The motion of atoms in molecules can drive electron dynamics via non-adiabatic couplings. In small molecules such as Ethylene, Carbon Dioxide, and Nitrophenol, this can lead to isomerization, electronic relaxation, or other time-dependent effects following excitation from a bonding to an anti-bonding molecular orbital. To study these mechanisms, we use ultraviolet photons of various energies from a bright High Harmonic Generation source to first initiate dynamics and subsequently probe the system through ionization. We record the kinetic energy and angular distribution of the resultant photoelectrons using a Velocity Map Imaging spectrometer, allowing us to track the evolution of the electronic state.

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