Abstract Submitted
for the DAMOP13 Meeting of
The American Physical Society

Probing Ultrafast Internal Conversion in Ethylene Using Vacuum Ultraviolet Pulses[1] TRAVIS WRIGHT, CHAMPAK KHURMI, DANIEL SLAUGHTER, LBNL, NOBUHIKO KUZE, Sophia University, ALI BELKACEM, LBNL — Molecules with the ability to quickly dissipate energy when exposed to light play a fundamental role in processes such as vision and DNA photostability. The motion that these large molecules execute to achieve radiationless de-excitation is often centered about a single carbon-carbon double bond. Ethylene is the smallest molecule with a carbon-carbon double bond, and exhibits internal conversion within 50 to 100 femtoseconds of excitation. Using intense vacuum ultraviolet (VUV) light produced from a high harmonics source, we perform pump-probe spectroscopy on ethylene with both arms containing VUV light. By collecting both photoelectrons and photoions, we can gain new insight into the time evolution of ethylene's excited state.

[1]This work was supported by the U.S. Department of Energy at LBNL under Contract No. DE-AC02-05CH11231.

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Date submitted: 25 Jan 2013 Electronic form version 1.4