Abstract Submitted
for the DAMOP17 Meeting of
The American Physical Society

Internal conversion and strong-field molecular ionization with shaped few-cycle laser pulses VINCENT TAGLIAMONTI, ARTHUR ZHAO, BRIAN KAUFMAN, Department of Physics and Astronomy, Stony Brook University, Stony Brook, New York 11794, TAMAS ROZGONYI, Institute of Materials and Environmental Chemistry, Research Centre for Natural Sciences, Budapest 1117 Magyar, Hungary, PHILIPP MARQUETAND, LEA IBELE, University of Vienna, Institute of Theoretical Chemistry, Wien, Austria, THOMAS WEINACHT, Department of Physics and Astronomy, Stony Brook University, Stony Brook, New York 11794 — We study strong-field molecular ionization and internal conversion dynamics using few-cycle laser pulses tailored with an AOM based pulse shaper. The pulse shapes we used were chosen to illuminate internal conversion dynamics taking place during resonance enhanced strong-field molecular ionization. We measure the photoelectron spectrum as a function of pulse shape and use a recently developed model to interpret the pulse shape dependent molecular dynamics. Our results highlight the subtle interplay of electronic and nuclear dynamics involved in strong-field ionization.

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Date submitted: 06 Feb 2017 Electronic form version 1.4