

Abstract Submitted  
for the DAMOP13 Meeting of  
The American Physical Society

**A look at Strong Field Molecular Ionization via photoelectron-photoion coincidence imaging** PÉTER SÁNDOR, ARTHUR ZHAO, WILLIAM LUNDEN, THOMAS WEINACHT, Department of Physics and Astronomy, Stony Brook University, Stony Brook, NY — Strong Field Ionization (SFI) is an important tool for initiating and probing electronic dynamics in molecules. It is the first step of high-harmonic generation, which is currently the main method for producing attosecond pulses. We study strong field ionization of small polyatomic molecules (with several closely spaced low lying ionic states) using velocity map imaging of the photoelectrons in coincidence with the photoions. Our measurements reveal different features in the photoelectron spectrum associated with different fragment ions, and illustrate the production of multi-hole electron wave packets (superpositions of ionic states) via direct ionization from multiple molecular orbitals.

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Date submitted: 25 Jan 2013

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