

Abstract Submitted  
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**New Apparatus for the Study of Electron-Induced Molecular Dissociation Dynamics** ALI MORADMAND, JOSHUA WILLIAMS, DEVIN KALAFUT, ALLEN LANDERS, MIKE FOGLE, Auburn University — A new COLTRIMS-type momentum imaging apparatus, consisting of a skimmed gas jet crossed with a pulsed electron beam, is used to study electron-induced dissociation dynamics. The apparatus makes use of a synchronously pulsed electrostatic spectrometer coupled with a position-sensitive detector. This spectrometer provides both time-of-flight and initial momentum information for ion fragments formed during dissociation. Energy-dependent results for single and double ionization of methane will be presented as well as dependence on molecular orientation. Future projects involving anion-cation fragment pair production and low-energy dissociative electron attachment to molecules will also be discussed.

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