Abstract Submitted
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3D Imaging the Photoionization of Propane at the Carbon K-Edge[1] A. GATTON, J.B. WILLIAMS, Auburn University, T. JAHNKE, M.S. SCHÖFFLER, R. DÖRNER, University of Frankfurt, TH. WEBER, LBNL, A.L. LANDERS, Auburn University — We have used Cold Target Recoil Ion Momentum Spectroscopy (COLTRIMS) to investigate the Carbon K-shell photoionization of Propane (C_3H_8) by 295eV photons and the subsequent auger decay leading to molecular dissociation. We present preliminary data analysis including calibration and identification of dissociation channels. Identified channels that may yield Molecular Frame Photoelectron Angular Distributions (MFPADS) or dynamical information include:

$$\begin{aligned}
\gamma_{295eV} + C_3H_8 &\Rightarrow e_{photo} + e_{auger} + H^+ + C_3H_7^+ \\
\gamma_{295eV} + C_3H_8 &\Rightarrow e_{photo} + e_{auger} + CH_3^+ + C_2H_5^+ \\
\gamma_{295eV} + C_3H_8 &\Rightarrow e_{photo} + e_{auger} + CH_3^+ + CH_3^+ + CH_2.
\end{aligned}$$

Analysis is underway to determine the body frame of the molecule and to investigate the influence of the molecular potential and dissociation pathways on the photoelectron emission.

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Allen Landers
Auburn University

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