

Abstract Submitted
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Acetylene/Vinylidene Isomerization after Carbon K-shell Photo-Ionization¹ TIMUT OSIPOV, LBNL, T. WEBER, T. JAHNKE, Frankfurt Univ., A. ALNASER, KSU, A. LANDERS, M. HERTLEIN, LBNL, O. JAGUTZKI, L. SCHMIDT, M. SCHÖFFLER, Frankfurt Univ., M. PRIOR, B. FEINBERG, LBNL, C. L. COCKE, KSU, R. DÖRNER, Frankfurt Univ., A. BELKACEM, LBNL, LBNL TEAM, KSU TEAM, FRANKFURT TEAM, AUBURN TEAM — Comprehensive study of the acetylene/vinylidene isomerization dynamics after the carbon k-shell photoionization followed by the Auger decay was performed by means of the COLTRIMS (COLd Target Recoil Ion Momentum Spectroscopy) technique. The Auger electrons, produced in this reaction, were detected in coincidence with the products of the Coulomb explosion of the dication $C_2H_2^{2+}$. Measurement of the 3d vector momenta for all detected particles inferred the Auger electron energies and directions in the body fixed molecular frame along with the KER (Kinetic Energy Release) for different break up channels. This highly differential reaction cross-section study provided very unique information about the fragmentation pathways of the doubly charged acetylene molecule.

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