

Abstract Submitted  
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**Single- and multi-photon induced Coulomb explosion of carbon ring molecules**<sup>1</sup> KURTIS BORNE, SHASHANK PATHAK, ANBU VENKATACHALAM, Kansas State University, DEBADARSHINI MISHRA, University of Connecticut, ILEANA DUMITRIU, Hobart and William Smith Colleges, RENEE C. BILODEAU, Advanced Light Source, Lawrence Berkeley National Laboratory, SURJENDU BHATTACHARYYA, NATHAN MARSHALL, FARZANEH ZIAEE, KEYU CHEN, Kansas State University, NORA BERRAH, University of Connecticut, ARTEM RUDENKO, DANIEL ROLLES, Kansas State University — We present the results of experiments conducted on several carbon ring molecules when subject to ultrafast ionizing radiation fields. By employing either pulses of a strong-field near-infrared laser or an electron-synchrotron generated X-ray beam, we excite these molecules to a highly charged cationic state which will dissociate into several neutral or charged ionic fragments. By employing coincident ion momentum imaging techniques, we can measure the relative yields, angular distributions, and kinetic energies of these photoproducts. We show evidence that these charged carbon rings predominantly fragment sequentially, where the later fragmentation step(s) occur on a timescale longer than the rotational period of the molecule.

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