

Abstract Submitted  
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**A comparative study of dissociation and ionization of isoelectronic  $\text{N}_2^+$  and  $\text{CO}^+$  molecular ions in an ultrafast intense laser field.**<sup>1</sup> B. GAIRE, NORA G. JOHNSON, J. MCKENNA, A.M. SAYLER, E. PARKE, K.D. CARNES, B.D. ESRY, I. BEN-ITZHAK, J.R. Macdonald Laboratory, Department of Physics, Kansas State University — The response of the molecular ion beams  $\text{N}_2^+$  and  $\text{CO}^+$  to intense (up to  $5 \times 10^{15}$  W/cm<sup>2</sup>) ultrashort laser pulses (10 and 45 fs) at 790 nm wavelength is investigated. For this purpose, we employ a coincidence 3D momentum imaging method to separate all breakup channels and then obtain kinetic energy release spectra and angular distributions of each of the channels. In particular, we will make a direct comparison between  $\text{N}_2^+$  and  $\text{CO}^+$  fragmentation focusing on the similarities and differences of these two molecules that share similar electronic configurations. The relative branching ratios of all the relevant breakup channels will also be discussed.

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