Abstract Submitted
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Ionization and Dissociation of O_2^+ and N_2^+ in Intense Short Pulse Laser Fields[1] A. M. SAYLER, R. CABRERA-TRUJILLO, P. Q. WANG, B. GAIRE, NORA G. JOHNSON, M. LEONARD, E. PARKE, K. D. CARNES, B. D. ESRY, I. BEN-ITZHAK, J.R. Macdonald Laboratory, Physics Department, Kansas State University — The momentum distributions for ionization and dissociation of O_2^+ and N_2^+ exposed to intense short laser pulses have been studied experimentally using a 3D coincidence momentum imaging method. Both 790nm laser pulses of 8 to 120fs at intensities up to 10^{15} W/cm^2 and 395nm pulses of 45fs at intensities up to 10^{13} W/cm^2 have been used. The momentum distributions yield a rich structure in kinetic energy release and angular distribution that is used to deduce the dissociation pathways. The angular distributions for these two molecules, which are theoretically predicted to be significantly different [1], will be presented. [1] X. M. Tong, Z. X. Zhao, A. S. Alnaser, S. Voss, C. L. Cocke and C. D. Lin, J. Phys. B **38**, 333 (2005)

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