Abstract Submitted
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Laser-induced dissociative and nondissociative ionization of molecular ion beams[1] U. ABLIKIM, B. GAIRE, M. ZOHRABI, K.D. CARNES, I. BEN-ITZHAK, J.R. Macdonald Laboratory, Department of Physics, Kansas State University — We have studied the laser-induced ionization of molecular ion beams such as NO^+, O_2^+, and CO^+. We will present a coincidence three-dimensional momentum imaging method that we recently developed [1], which allows the simultaneous measurement of dissociative and nondissociative ionization of molecular ion beams. We measured the nondissociative (e.g. NO^{++}) and dissociative (e.g. N^++O^+) ionization yields as a function of laser intensity and pulse duration. Our experimental results suggest that these yields increase with laser intensity toward saturation. We also find that enhanced ionization is the dominant contribution to dissociative ionization; therefore, the channel is suppressed for very short pulses.

[1] B. Gaire, Ph. D Thesis, Kansas State University (2011)

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