

Abstract Submitted
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Multiphoton dissociative ionization of CS⁺¹ JYOTI RAJPUT, BETHANY JOCHIM, M. ZOHRABI, K.J. BETSCH, U. ABLIKIM, BEN BERRY, T. SEVERT, A.M. SUMMERS, G.S.J. ARMSTRONG, B.D. ESRY, K.D. CARNES, I. BEN-ITZHAK, J. R. Macdonald Laboratory, Department of Physics, Kansas State University, Manhattan, KS 66506, USA — We have studied the dissociative photoionization of a CS⁺ molecular ion beam in the strong-field regime using <50 fs IR laser pulses ($\lambda \sim 790$ nm) from a 10 kHz, ~ 2 mJ (per pulse) Ti:Sapphire laser system. A coincidence three-dimensional momentum imaging method was used to measure all ions and neutrals formed during this multiphoton process. Two prominent channels were observed: charge-symmetric dissociation, yielding C⁺ + S⁺, and charge-asymmetric dissociation, yielding C + S²⁺. The differences between these two channels with reference to their relative production probability, energetics, and angular distributions is the focus of this work.

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