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Fragmentation of CD^+ induced by intense ultrashort laser pulses[1]

M. ZOHRABI, B. GAIRE, U. ABLIKIM, BETHANY JOCHIM, B. BERRY, T. SEVERT, K.J. BETSCH, A.M. SUMMERS, K.D. CARNES, B.D. ESRY, I. BEN-ITZHAK, J.R. Macdonald Laboratory, Physics Department, Kansas State University, Manhattan, Kansas 66506, USA, I.D. WILLIAMS, School of Mathematics and Physics, Queens University Belfast, Belfast, BT7 1NN, United Kingdom, L. GRAHAM[2], U. LEV, O. HEBER, D. ZAJFMAN, Department of Particle Physics, Weizmann Institute of Science, IL-76100 Rehovot, Israel — The fragmentation of CD^+ in intense ultrashort laser pulses was investigated using a coincidence three-dimensional momentum imaging technique improved by employing both transverse and longitudinal electric fields. The most probable dissociation pathways for the two lowest dissociation limits, $C^+ + D$ and $C + D^+$, were identified for 22 fs, 798 nm and 50 fs, 392 nm pulses. Curiously, the charge-asymmetric dissociation of CD^{2+}, which was measured using 798 nm photons, was not observed with 392 nm photons at the same peak intensity.

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