

Abstract Submitted  
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**Experimental study of structure in enhanced ionization of  $H_2^+$  in intense ultrashort laser pulses**<sup>1</sup> I. BEN-ITZHAK, P.Q. WANG, A.M. SAYLER, K.D. CARNES, B.D. ESRY, A.S. ALNASER, B. ULRICH, X.M. TONG, I.V. LITVINYUK, C.M. MAHARJAN, P. RANITOVIC, T. OSIPOV, R. ALI, S. GHIMIRE, Z. CHANG, C.D. LIN, C.L. COCKE, J.R. Macdonald Laboratory, Physics Department, Kansas State University, Manhattan KS 66506, USA — Charge resonance enhanced ionization (CREI) of  $H_2^+$  in intense ultrashort laser pulses was measured using molecular dissociation imaging of an  $H_2^+$  beam and with a pump-probe technique using COLTRIMS on an  $H_2$  target. The dependence of the ionization probability on the internuclear distance is determined independently from both measurements using a simple model for the initial dissociation step. Both data sets lead to a similar R-dependence which indicates that ionization is enhanced at large internuclear distances as predicted by theory [1]. However, in contrast to the predictions for a double peak structure, only one broad peak is observed. [1] T. Zuo and A.D. Bandrauk, Phys. Rev. A **52**, R2511 (1995)

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