

Abstract Submitted
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Time-dependent dynamics of intense laser-induced above threshold Coulomb explosion¹ B.D. ESRY, I. BEN-ITZHAK, J.R. Macdonald Laboratory, Kansas State University, Manhattan, KS 66506 — We use our recently proposed model [1] to extract information about the nuclear dynamics from the recent Coulomb explosion data of Staudte *et al.* taken with 40 fs pulses [2]. That data, taken at multiple intensities near the ionization appearance intensity for both H₂ and D₂ in linearly and circularly polarized light, shows remarkable structure and regularity not easily explained by conventional models. Because our model does fit the spectra well, we can infer the qualitative time-dependent evolution of the system. In addition, we speculate about the possibility of rescattering leading to above threshold Coulomb explosion.

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[2] A. Staudte, D. Pavčić, S. Chelkowski, D. Zeidler, M. Meckel, H. Niikura, M. Schöffler, S. Schössler, B. Ulrich, P. P. Rajeev, Th. Weber, T. Jahnke, D.M. Villeneuve, A.D. Bandrauk, C.L. Cocke, P.B. Corkum, and R. Dörner, Phys. Rev. Lett. (accepted).

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