

Abstract Submitted  
for the DAMOP08 Meeting of  
The American Physical Society

**Large-angle electron diffraction structure in laser-induced rescattering from rare gases** D. RAY, I. BOCHAROVA, C. MAHARJAN, P. RANITOVIC, B. GRAMKOW, M. MAGRAKVELIDZE, S. DE, I.V. LITVINYUK, A.T. LE, C.D. LIN, C.L. COCKE, J. R. Macdonald Laboratory, Physics Department, Kansas State University, Manhattan, KS 66506, B. ULRICH, Institut für Kernphysik, University Frankfurt, Frankfurt Germany, T. MORISHITA, Dept. of Applied Physics and Chemistry, The University of Electro-communications, Tokyo Japan, G.G. PAULUS, Institute of Optics and Quantum Electronics, Jena, Germany — We have measured full momentum images of electron rescattered from Xe, Kr and Ar following the liberation of the electrons from these atoms by short, intense laser pulse. Structural study of transient target atoms (or molecules) can be done by focusing on the high energy backscattered electrons in such laser-matter interactions. Recent theoretical developments show that full solutions to time-dependant Schrodinger equation including rescattering allow the identification of specific “back rescattering ridges” (BRR) along which the angular structure of the differential cross section is clearly visible and very target dependant. We have experimentally observed these predicted features in the momentum images.

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Date submitted: 04 Feb 2008

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