

Abstract Submitted  
for the DAMOP06 Meeting of  
The American Physical Society

**Using Molecular Dissociation to Determine the Efficiency of a Delay Line Microchannel-plate Detector**<sup>1</sup> B. GAIRE, A.M. SAYLER, P.Q. WANG, NORA G. JOHNSON, M. LEONARD, E. PARKE, K.D. CARNES, I. BEN-ITZHAK, J.R. Macdonald Laboratory, Department of Physics, Kansas State University, Manhattan KS 66506, U.S.A. — The detection efficiency of a delay line microchannel-plate (MCP) detector has been measured using the dissociation and ionization channels of a heteronuclear diatomic molecular ion. The method is based on the fact that molecular breakup always yields two hits on a detector, but due to finite detection efficiency some of these events are recorded as single particles while others are detected in coincidence. This method is applicable for both timing and position signals of the detector. To demonstrate the application of this method we will present the detection efficiency measured with HD<sup>+</sup> molecular-ion breakup.

<sup>1</sup>This work was supported by the Chemical Sciences, Geosciences and Biosciences Division, Office of Basic Energy Sciences, Office of Sciences, U.S. Department of Energy.

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Date submitted: 01 Feb 2006

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