

Abstract Submitted
for the DAMOP17 Meeting of
The American Physical Society

Experimental optimization of directed field ionization¹ ZHIMIN CHERYL LIU, VINCENT C. GREGORIC, Bryn Mawr College, THOMAS J. CARROLL, Ursinus College, MICHAEL W. NOEL, Bryn Mawr College — The state distribution of an ensemble of Rydberg atoms is commonly measured using selective field ionization. The resulting time resolved ionization signal from a single energy eigenstate tends to spread out due to the multiple avoided Stark level crossings atoms must traverse on the way to ionization. The shape of the ionization signal can be modified by adding a perturbation field to the main field ramp. Here, we present experimental results of the manipulation of the ionization signal using a genetic algorithm. We address how both the genetic algorithm and the experimental parameters were adjusted to achieve an optimized result.

¹This work was supported by the National Science Foundation under Grants No. 1607335 and No. 1607377.

Michael Noel
Bryn Mawr College

Date submitted: 28 Jan 2017

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