

Abstract Submitted
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Quantum beats in the field ionization of Rydberg atoms in the presence of magnetic fields¹ VINCENT C. GREGORIC, HANNAH HASTINGS, Bryn Mawr College, THOMAS J. CARROLL, Ursinus College, MICHAEL W. NOEL, Bryn Mawr College — By exciting a coherent superposition and varying its phase evolution, quantum beats in the selective field ionization of Rydberg atoms have been observed [R. Feynman, et al., *PRA*, **92**, 043412 (2015)]. Here, we present a study exploring the effect of electric and magnetic fields on quantum beats. Beginning with a single excited state, a coherent superposition is created by a short electric field pulse in the presence of a static magnetic field. The resulting quantum beats are then observed in the field ionization spectrum. Additionally, millimeter-wave spectroscopy is used to probe the state populations in this superposition.

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