

Abstract Submitted
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Mapping the dipole-dipole interaction among ultracold Rydberg atoms¹ DONALD P. FAHEY, Bryn Mawr College, THOMAS J. CARROLL, Ursinus College, MICHAEL W. NOEL, Bryn Mawr College — A long-range dipole-dipole interaction couples the atoms in an ultracold Rydberg gas. This can lead to changes in the spatial configuration of states over an extended region. We discuss the use of selective field ionization with a spatially sensitive ion detector to directly map dipole-dipole interaction induced level shifts and energy exchange over large distances in a MOT. Experimental and simulation results will be presented.

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