

Abstract Submitted
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Dipole-Dipole Broadening in ^{85}Rb Rydberg Samples PAUL TANNER, University of Virginia, B.J. CLAESSENS, Tech. Univ. Eindhoven, WENHUI LI¹, T.F. GALLAGHER, University of Virginia — A key interesting property of high- n Rydberg atoms is their large transition dipole moments. These dipole moments allow for observation and manipulation of electric dipole-dipole interactions between Rydberg atoms – a key for quantum computing schemes. We measured the strength of the dipole-dipole interaction vs. Rydberg atom density in a magneto-optical trap – specifically we measured the linewidths of microwave $ns-np$ transitions and observed broadening of up 100 MHz.

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