

Abstract Submitted
for the OSS06 Meeting of
The American Physical Society

Terahertz detection of angular momentum states in Rydberg atoms¹ R.J.A. MURRAY, C. RANGAN, University of Windsor — In alkali Rydberg atoms, states with higher angular momentum $\ell \geq 3$ are degenerate in energy, and cannot be distinguished by standard methods such as field-ionization. In this poster, we propose a method of selective re-distribution of angular momentum states by terahertz frequency half-cycle pulses. The redistributed population can then be read-out easily, giving a signature of the original angular momentum. These results are expected to be an important advance in quantum information processing. C. Rangan and R. J. A. Murray, Phys. Rev. A **72**, 053409 (2005).

¹This work was supported by NSERC, Canada.

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Date submitted: 28 Feb 2006

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