

Optical rotation of CPT dark states

Optical Raman excitation is used to investigate the ground-state clock transition in laser cooled Rb atoms. The initial state preparation in a Ramsey-type scheme is achieved by coherent population trapping whereas the second pulse is a Raman $\pi/2$ pulse allowing the evolution of the coherence to be mapped back onto the bare atomic states. This allows for a significant increase in detected signal compared with a conventional CPT detection scheme.

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Track Classification: Miniature, Portable and Space Systems