

Abstract Submitted
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Laser cooling of Ho atoms for collective encoding of a quantum register¹ JINLU MIAO, JACOB COVEY, MARK SAFFMAN, University of Wisconsin — Ho atoms have 128 hyperfine ground states (the most of any stable atomic isotope) which may be used to collectively encode a large quantum register. We present progress towards laser cooling of Ho atoms using the $|4f^{11}6s^2, J = 15/2\rangle \rightarrow |4f^{11}6s6p, J = 17/2\rangle$ transition at 410.5 nm. The design for a long lifetime optical trap using near 400 nm light will also be discussed.

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