

Abstract Submitted
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Laser spectroscopy of trapped Th^{3+} ions ADAM STEELE, COREY CAMPBELL, LAYNE CHURCHILL, MICHAEL DEPALATIS, DAVID NAYLOR, ALEX KUZMICH, MICHAEL CHAPMAN, Georgia Institute of Technology — We are applying the techniques of laser cooling and ion trapping to investigate the low lying nuclear isomeric state in ^{229}Th . We will confine Th^{3+} atoms in an RF trap [1] and sympathetically cool them with barium ions. The ions are produced by laser ablation from a thorium metal target by the third harmonic of a Q-switched YAG laser. Using mass-spectroscopic techniques we separate out the Th^{3+} ions from the plume of ablation products. We once trapped we will observe fluorescence from the trapped ions using transitions at 984 nm and 690 nm. [1] Peik E. and Tamm Chr., *Europhysics Letters*, **61** (2) (2003)

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