

Abstract Submitted  
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**Lifetime Measurements of Trapped  $^{232}\text{Th}^{3+}$**  MICHAEL DE-PALATIS, MICHAEL CHAPMAN, Georgia Institute of Technology — In recent years, there has been considerable interest in the low lying nuclear isomer state of  $^{229}\text{Th}$  which is only several eV above the nuclear ground state [1]. To date, several groups are taking a variety of approaches to finding and exciting this unique state [2], including the use of trapped  $\text{Th}^{3+}$  ions. Despite this attention, few precise measurements have been made of atomic lifetimes. In this work we present experiments to measure the  $6D_{3/2}$  and  $6D_{5/2}$  states using laser cooled  $^{232}\text{Th}^{3+}$  confined in a linear Paul trap.

[1] E. Peik and Chr. Tamm, *Europhys. Lett.* **61**, 181 (2003); V. V. Flambaum, *Phys. Rev. Lett.* **97**, 092502 (2006); B. R. Beck *et al.*, *Phys. Rev. Lett.* **98**, 142501 (2007).

[2] W. G. Rellergert *et al.*, *Phys. Rev. Lett.* **104**, 200802 (2010); S. G. Porsev *et al.*, *Phys. Rev. Lett.* **105**, 182501 (2010); C. J. Campbell *et al.*, *Phys. Rev. Lett.* **106**, 223001 (2011).

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