

Abstract Submitted  
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**Investigation of Vanadium foils for in situ UCN detection for the UCN $\tau$  lifetime experiment** BRITTNEY VORNDICK<sup>1</sup>, NCSU/LANL, UCN $\tau$  COLLABORATION — We will report on preliminary work aimed at developing a new technique for counting trapped ultra-cold neutrons (UCN) for a precision lifetime experiment, UCN $\tau$ . We propose to mechanically insert a  $^{51}\text{V}$  foil to capture neutrons in the trap and then count the  $^{51}\text{V}$  decays. The negative potential of  $^{51}\text{V}$ ; relatively short half life of  $^{51}\text{V}$  (3.74 minutes); and large imaginary potential makes  $^{51}\text{V}$  ideal for an activation/counting technique. Preliminary measurements show that high counting efficiency and low backgrounds can be obtained by counting  $\gamma - \beta$  coincidences.

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