

Abstract Submitted  
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**The UCN $\tau$  measurement of the free neutron lifetime: status report**<sup>1</sup> CHRIS CUDE-WOODS, Los Alamos National Laboratory, UCN $\tau$  COLLABORATION — The UCN $\tau$  experiment measures the  $\beta$  decay lifetime of the free neutron. Ultracold neutrons (UCN) are loaded into a trap wherein they are confined by gravity and an array of permanent magnets, and, after varying storage times, the surviving UCN are counted in-situ. The experiment completed its first production science run during the 2017 beam cycle at the Los Alamos Neutron Science Center, roughly quadrupling data taken during previous commissioning and engineering runs and leading to a statistical uncertainty well below 0.5 s. We will present the current status of the analysis process and expected total uncertainties in this data set.

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