

Abstract Submitted  
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**BL3: Next generation beam experiment to measure the neutron lifetime**<sup>1</sup> NADIA FOMIN, University of Tennessee, Knoxville, BL3 COLLABORATION COLLABORATION — Neutron beta decay is an archetype for all semi-leptonic charged-current weak processes. A precise value for the neutron lifetime is required for consistency tests of the Standard Model and is needed to predict the primordial  $4\text{He}$  abundance from the theory of Big Bang Nucleosynthesis. An effort is under way for an in-beam measurement of the neutron lifetime that is able to evaluate the systematic uncertainties at the 0.3 s level. This effort is part of a phased campaign of neutron lifetime measurements based at the NIST Center for Neutron Research, using the Sussex-ILL-NIST technique. Recent advances in neutron fluence measurement techniques as well as new large area silicon detector technology address the two largest sources of uncertainty of in-beam measurements, paving the way for a new measurement. The experimental design, schedule, and projected uncertainties for the main subsystems will be discussed.

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