Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

Progress toward a new beam measurement of the neutron lifetime SHANNON FOGWELL HOOGERHEIDE, NIST - Natl Inst of Stds Tech — Neutron beta decay is the simplest example of nuclear beta decay. A precise value of the neutron lifetime is important for consistency tests of the Standard Model and Big Bang Nucleosysnthesis models. The beam neutron lifetime method requires the absolute counting of the decay protons in a neutron beam of precisely known flux. Recent work has resulted in improvements in both the neutron and proton detection systems that should permit a significant reduction in systematic uncertainties. A new measurement of the neutron lifetime using the beam method will be performed at the National Institute of Standards and Technology Center for Neutron Research. The projected uncertainty of this new measurement is 1 s. An overview of the measurement and the technical improvements will be discussed.

Shannon Fogwell Hoogerheide
NIST - Natl Inst of Stds
Tech

Date submitted: 01 Jul 2016 Electronic form version 1.4