



Contribution ID: 151

Type: Oral

Progress toward a new beam measurement of the neutron lifetime

Tuesday, October 18, 2016 9:30 AM (20 minutes)

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 nucleosynthesis models. There is currently a disagreement between measurements of the neutron lifetime made using the cold neutron beam method and ultracold neutron storage methods. 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.

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Session Classification: Tu - 1

Track Classification: Fundamental physics and precision experiments with muons, pions, neutrons, antiprotons, and other particles