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Neutron Beta Decay: present efforts and a look into the future JONATHAN MULHOLLAND, University of Tennessee

The decay of the free neutron is the archetypal charged current semi-leptonic weak process. As such, experimental investigation of the decay process through lifetime and decay correlation measurements provide insight into a wide variety of physics, ranging from fundamental interactions to the formation of the early Universe. The neutron lifetime is a crucial parameter for determining primordial element abundance. Decay correlations are necessary for tests of CKM matrix unitarity, which could be the point of discovery for physics beyond the standard model. Context and physical motivation for the study of free neutron decay will be provided, followed by a discussion of the status of the field and plans for future measurements.