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Neutron Beta Decay as a test of the Standard Model and probe for new physics

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Precision studies of beta decay can provide stringent tests of the standard model, and probes for new physics, at a level that is competitive with constraints from high energy particle colliders. Recent evaluations of the "inner radiative correction"have led to a 3-sigma departure from unitarity in the first row of the CKM matrix. Neutron beta decay is an ideal system for making high-precision measurements of Vud, and thus testing the tension with unitarity, as it is free from nuclear structure effects. In this talk I will discuss the motivation for neutron beta decay experiments. I will also cover recent results and future efforts toward improved determinations of Vud from neutron beta decay.

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