

Neutron Lifetime Puzzle



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Addressing the neutron lifetime anomaly with correlation parameters

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Combining measurements of the lifetime with measurements of (angular) correlation parameters in neutron beta decay, we strive to most precisely determine the matrix element V_{ud} of the CKM quark mixing matrix. The goal is to test CKM unitarity on the 10^{-4} level.

Alternatively, combining the determination of V_{ud} from superallowed nuclear decays and neutron correlation parameters, allows for a rather precise determination of the neutron lifetime.

In this talk, I will present the current status and prospects of correlation measurements (which exhibit their own anomaly), and discuss the connection to the neutron lifetime.

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