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Superallowed Nuclear Beta Decays and CKM Unitarity

Tuesday 11 October 2005 13:30 (30 minutes)

A new method for computing hadronic effects on electroweak radiative corrections to low energy semileptonic weak interaction processes is described. Applying this approach to the extraction of the quark mixing matrix element Vud, Alberto Sirlin and I find from superallowed nuclear beta decay Vud = 0.97377(27).
Combining that result with recent determinations of Vus from kaon decays provides a precision test of CKM unitarity and constraint on new physics effects.. Prospects for further improvements are briefly discussed.

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