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Nuclear and Neutron Physics Tests of CKM Unitarity - Overview and Motivation

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The Cabbibo-Kobayashi-Maskawa (CKM) matrix describes quark mixing and CP violation in the Standard Model of Elementary Particle Physics (SM). One of the most precise tests of the SM is the verification of the unitarity of the CKM matrix in the first row: the verification that the sum of the squared elements in that row adds to unity. In my talk, I will introduce the theoretical motivation for that test, and I will introduce the most recent studies in nuclear and neutron beta decay, and I will show how their results can be used, in several independent ways, to perform the unitarity test. Finally, I will discuss the status of this test, which is less satisfactory than in previous years.