



Contribution ID: 86

Type: **Plenary talk**

Precision tests of Standard Model with Cabibbo unitarity and nuclear beta decays

Wednesday 10 July 2024 09:00 (40 minutes)

Unitarity of the Cabibbo-Kobayashi-Maskawa quark mixing matrix is a testable prediction of the Standard Model. The most precise constraint, the Cabibbo unitarity constraint, is currently provided by a combination of superallowed nuclear beta decays and kaon decays, testing SM self consistency at the 0.01% level. Recent improvements in the theory of SM radiative corrections to beta decays revealed an apparent 2.5σ deficit, referred to as Cabibbo anomaly. I review the current status and main ingredients of this low-energy puzzle and give an outlook to further developments and possible BSM explanations.

session

K. Precision and New Physics

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Session Classification: Plenary session