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Study of neutron beta decay with the Nab experiment

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One of the current problems of the Standard Model of Elementary Particle Physics is the about three sigma failure of the first-row unitarity test of the Cabbibo-Kobayashi-Maskawa matrix. A long-standing goal of the study of free neutron beta decay is to better determine its upper left element (”Vud”). That is possible with measurements of the neutron lifetime and a correlation coefficient (the beta asymmetry or the neutrino-electron correlation coefficient). The Nab collaboration is working on an improvement in the accuracy of neutrino electron correlation coefficient that - if achieved - is large enough to base the determination of Vud on neutron data alone. In this talk, I will give a status report and an outlook.

Parallel Session

Fundamental Symmetries / New Physics Searches

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