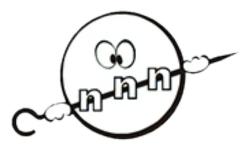
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## The Neutrino Electron Correlation Coefficient in Neutron Beta Decay

Monday, 26 May 2025 15:20 (20 minutes)

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 a better determination of its upper left element ("Vud"). That is possible with measurements of the neutron lifetime and a correlation coefficient: the beta asymmetry "A" or the neutrino electron correlation coefficient "a". In this talk, I will present a recent measurement of the neutrino electron correlation coefficient with aSPECT, and I will present commissioning data from a next generation experiment, Nab. The Nab collaboration is working on an improvement in the accuracy of neutrino electron correlation coefficient that - if achieved - is substantial enough to base the determination of Vud on neutron beta decay data alone.

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