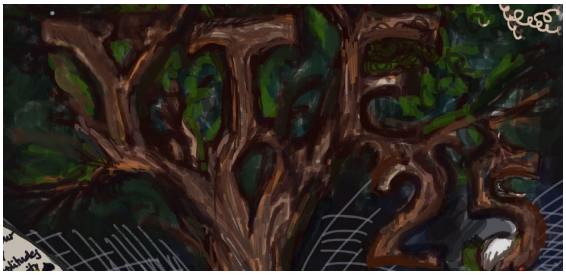

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Recent Developments in the Dispersive Evaluation of Hadronic Vacuum Polarisation Contributions to Muon g-2

Thursday 18 December 2025 12:00 (30 minutes)

The Fermilab measurement of the anomalous magnetic moment of the muon a_μ at 127ppb is one of the most precise experimental tests of the Standard Model. However, the ultimate interpretation of this result is still unclear due to significant tensions in the theoretical predictions, particularly those of the hadronic vacuum polarisation (HVP) contributions a_μ^{HVP}. The two methods — lattice and dispersive — give potentially discrepant results and the data inputs to the dispersive calculation are also themselves in $\sim 5\sigma$ tension. I will discuss the methods used for evaluation of a_μ^{HVP} and the challenges presently faced, along with an update on my ongoing work on the KNTW group's dispersive prediction. Such work is necessary to match the Fermilab experimental precision and to confidently assess the case for new physics in lepton magnetic dipole moments.

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