

New Perspectives



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Muon EDM searches at the new g-2 experiment at Fermilab

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The new g-2 experiment at Fermilab is expected to improve the limit on the muon electric dipole moment (EDM) by two orders of magnitude compared to the world's best limit previously set by the Brookhaven experiment. The Standard Model predicts a muon EDM far below the reach of current experiments, so any observation at Fermilab would be evidence for new physics, as well as a new source of CP violation in the lepton sector. Even if no EDM is observed, setting a stronger limit constrains BSM theories, making the muon EDM an excellent tool for new physics searches.

In this talk, I will review the various strategies being used to search for a muon EDM, with a focus on the analysis using the straw tracker detectors, which give the largest improvement compared to the previous measurement. I will also discuss the main systematics associated with the analysis, in particular the radial field and how it is measured with the precision required to not constrain the final result.

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