Contribution ID: **1157**   Type: **Neutrinos**

Correlating Muon g−2 Anomaly with Neutrino Magnetic Moments

Wednesday 26 May 2021 18:00 (15 minutes)

We have analyzed new contributions to the muon anomalous magnetic moment in a class of models that generates a naturally large transition magnetic moment for the neutrino (needed to explain the XENON1T electron recoil excess). These models are based on an approximate $SU(2)_H$ symmetry that suppresses the neutrino mass while allowing for a large neutrino transition magnetic moment. We have shown that the new scalars present in the theory with masses around 100 GeV can yield the right sign and magnitude for the muon $g−2$ which has been confirmed recently by the Fermilab collaboration. Such a correlation between muon $g−2$ and the neutrino magnetic moment is generic in models employing leptonic family symmetry to explain a naturally large ν_e. We have also outlined various other experimental tests of these models at colliders. Results will be presented.

Summary

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Session Classification: Neutrino III