

Muon $g-2$ Anomaly and Neutrino Magnetic Moments

Wednesday 19 May 2021 14:30 (15 minutes)

We present a novel framework based on $SU(2)_H$ horizontal symmetry, which generates a naturally large neutrino transition magnetic moment and explains the XENON1T electron recoil excess also predicts a positive shift in the muon anomalous magnetic moment. This shift is of the right magnitude to be consistent with the Brookhaven measurement as well as the recent Fermilab measurement of the muon $g - 2$. A relatively light neutral scalar from a Higgs doublet with a mass near 100 GeV contributes to muon $g - 2$, while its charged partner induces the neutrino magnetic moment. We also discuss the LHC phenomenology of these models.

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Session Classification: Neutrinos 1