

Non-Abelian Vector Dark Matter and Lepton Anomalous Magnetic Moments

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A non-Abelian $SU(2)_X$ gauge extension of the Standard Model is considered under which leptons carry non-trivial charge. Gauge anomaly cancellation requires additional vectorlike fermions, which along with neutral vector bosons that play the role of Dark Matter correct the muon and the electron anomalous magnetic moments as preferred by experiments. When Collider bounds, electroweak precision data, dark matter relic abundance, and lepton $g - 2$ are considered, the model is viable only within a narrow range of parameter space that corresponds to 1-3 TeV mass for the dark matter.

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