Leptoquark induced neutrino masses and the discrepancy of muon g - 2

Wednesday, 5 June 2024 16:30 (30 minutes)

Recent measurement of muon anomalous magnetic dipole moment (muon g - 2), performed by the Muon g - 2 Collaboration at Fermilab, differs from the Standard Model (SM) value calculated by the Muon g - 2Theory Initiative Group at the combined statistical significance of 5.1σ . Taking at face value, such discrepancy could be an indication of some sort of new physics. In this paper, we explain the discrepancy in the context of a model with leptoquarks, usually denoted as S(3, 1, -1/3) and R(3, 2, 1/6). In this model, the muon g-2 can receive a top-mass chiral enhancement. The neutrino masses are induced at both one- and two-loop levels. We found a texture, where the latter could be competitive to the former. Given that the model can simultaneously explain neutrino masses and muon g - 2 anomaly, it leads to several interesting predictions for lepton-flavor-violating rates, which could be probed by future experiments. The effects on $h \to \gamma\gamma$ and $h \to Z\gamma$ decays will also be discussed.

Please choose your flavour

Leptons

Primary author: JULIO, Julio (National Research and Innovation Agency)Presenter: JULIO, Julio (National Research and Innovation Agency)Session Classification: Lepton Flavours