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New physics behind the new muon g-2 puzzle?

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The recent measurement of the muon g-2 at Fermilab confirms the previous Brookhaven result. The leading hadronic vacuum polarization (HVP) contribution to the muon g-2 represents a crucial ingredient to establish if the Standard Model prediction differs from the experimental value. A recent lattice QCD result by the BMW collaboration shows a tension with the low-energy e+e−⟶hadrons data which are currently used to determine the HVP contribution. We refer to this tension as the new muon g-2 puzzle. In this Letter we consider the possibility that new physics contributes to the e+e−⟶hadrons cross-section. This scenario could, in principle, solve the new muon g-2 puzzle. However, we show that this solution is excluded by a number of experimental constraints.

In-person participation

Yes

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