Higgs 2021



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Higgs bosons signals of muon g-2 at the LHC and future colliders

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Among the simplest new physics explanations of the muon g-2 anomaly are scenarios with additional contributions mediated by SM gauge or Higgs bosons and new leptons. The leptons can be very heavy, even beyond the reach of future colliders, and thus the confirmation of such explanations might rely only on indirect evidence. This includes modifications of muon couplings to Z, W and Higgs bosons from SM predictions that can be searched for at the LHC and future colliders. Especially, a deviation of $h \rightarrow \mu^+\mu^-$ from SM prediction would be highly suggestive of this explanation. In addition, I will discuss di-Higgs and tri-Higgs signals tightly related to the explanation of muon g-2. Due to large predicted rates, even a very low energy muon collider could see a signal or rule out these models.

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