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Minimal Models of Loop-Induced Higgs Lepton Flavor Violation

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The LHC has reported a slight excess in the $h \rightarrow \tau\mu$ channel. If this lepton flavor violating decay is confirmed, an extension of the Standard Model (SM) will be required to explain it. A possibility to accommodate it is a model where the Higgs couples to new vectorlike fermions that in turn couple to the SM leptons through a flavor-violating four fermion interaction. The excess can be successfully explained while satisfying all other flavor constraints, with order one couplings, vectorlike fermion masses as low as 15 TeV, and a UV scale higher than 35 TeV.

Summary

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