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Collider signature of multicharged vectorlike leptons

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Multicharged vectorlike leptons (VLL) appear in BSM models such as TeV-scale see-saw neutrino masses, little Higgs etc. Their decays depend generally on how they couple to the W, Z and Higgs along with SM leptons. Based on that, it is possible to observe the VLL signatures in multilepton final states at LHC. Motivated by the muon (g-2) problem and flavor anomalies, it is possible to construct a model, where the VLL decays to a charged Higgs and then the charged Higgs decays to SM leptons. The collider signature of this model has unique features which is distinguishable from general vector like lepton signatures searched at LHC so far.

Summary

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