

Phenomenology 2021 Symposium



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Triplet Charged Higgs bosons at the LHC

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SU(2) triplet Higgs boson with $Y=0$ hyper charge breaks the custodial symmetry leading to a tree-level vertex with Z and W boson. This prompts the decays into ZW as compared to $t\bar{b}$ in a doublet charged Higgs case. However, additional Z_2 symmetry can make this triplet as inert leading to displaced mono/di-leptonic signatures. In case of complex triplet, the model produces a pure triplet dark matter along with a pure and mixed triplet charged Higgs bosons. The last scenario this gives rise to both the displaced and the prompt charged leptons in the final states. We try to distinguish such scenarios at the LHC.

Summary

Charged Higgs Phenomenology

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