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Charged Higgs production as probe for extra top Yukawa couplings

We discuss the possibility of probing additional top Yukawa couplings via charged Higgs boson (H^\pm) production at the Large Hadron Collider. The context is general Two Higgs Doublet Model (g2HDM). We show that additional top Yukawa couplings ρ_{tc} and ρ_{tt} in g2HDM can be searched via $cg \rightarrow bH^\pm \rightarrow b\bar{t}b$ process at the LHC with evidence may emerge as early as in the Run 3 data. A discovery may shed light on the observed baryon asymmetry of the Universe.

Reference

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