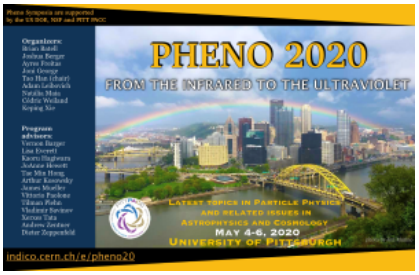

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Probing Exotic Charged Higgs Decays in the Type-II 2HDM through Top Rich Signal at a Future 100 TeV pp Collider

Monday, 4 May 2020 17:45 (15 minutes)

The exotic decay modes of non-Standard Model (SM) Higgs bosons are efficient in probing the hierarchical Two Higgs Doublet Models (2HDM). In particular, the decay mode $H^{\pm} \to HW^{\pm}$ serves as a powerful channel in searching for the charged Higgses. In our study, we analyzed the reach for $H^{\pm} \to HW^{\pm} \to t\bar{t}W$ at a 100 TeV pp collider, and showed that it extends the reach of the previously studied $\tau\tau W$ final states. Top tagging technique is used, in combination with the boosted decision tree classifier. Almost the entire hierarchical Type-II 2HDM parameter space can be probed via the combination of all exotic decay channels at low $\tan\beta$ region.

Summary

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